

# The National Locksmith®

\$5.00

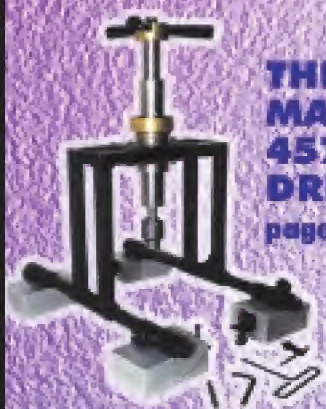
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INSTA-CODE SOFTWARE  
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May 1998  
Volume 69, No. 5

ALSO  
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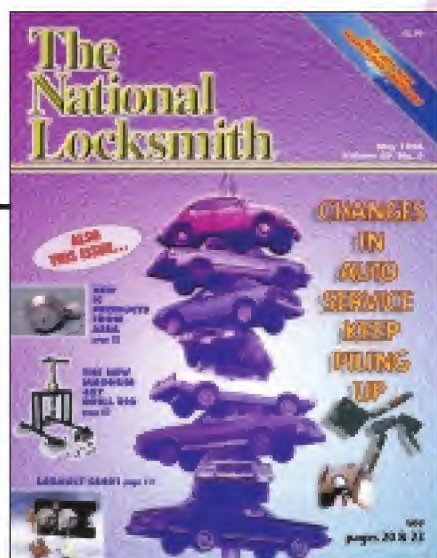
CHANGES  
IN  
AUTO  
SERVICE  
KEEP  
PILING  
UP



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V.A.T.S., P.A.T.S., M.A.T.S., Passlock 1, Passlock 3 and now Transponders! What will be next? In the ever changing world of vehicle security, timely service information is essential to keep abreast.

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The National Locksmith® ISSN #0364-3719 is published monthly by the National Publishing Co., 1533 Burgundy Parkway, Streamwood, Illinois 60107-1861. Periodicals postage paid at Bartlett, Illinois 60107 and additional mailing offices USPS 040110. Subscriptions \$41.00 per year in the USA; \$54.00 per year in Canada; \$67.00 in all other countries. Single copies \$5.00 each. Postmaster, please send change of address to National Publishing Co., 1533 Burgundy Parkway, Streamwood, Illinois 60107-1861. ©1998 by the National Publishing Company. All rights reserved. Printed in the U.S.A.



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# COMMENTARY



<http://www.TheNationalLocksmith.com>  
User name: national User ID: G5fh84

## INSTA-CODE takes off and ALOA proposes changes

**W**e've been busy here at The National Locksmith sending out demos for our new code program, INSTA-CODE. Hundreds of people have already received a free copy of the demo by E Mail. And many others have received the demo on disk. Reaction to the program has been very positive.

INSTA-CODE allows you to print out any code card with the touch of one button. And the Print Series function is proving popular as well. The program will print out any code series you like, so you can create and customize your own code books.

Another function that is attracting a lot of attention is the Client Tracking feature. INSTA-CODE literally functions as your client database if you wish, retaining code information on the codes your clients use. This allows you to build repeat business, and cut code keys for fleets or dealers without leaving the shop.

Congratulations to those who have already purchased the full version of the software. If you would like a free demo by E Mail, send your request to [NATLLOCK@AOL.COM](mailto:NATLLOCK@AOL.COM). If you prefer to receive the demo on disk, send \$5 for shipping and handling. The demo is a fully functional program, and you'll be able to view all the series in INSTA-CODE, print code cards and print whole code series. The only difference from the demo to the full version is that the bittings are loaded only for three series. So this really gives you the opportunity to completely test the program.

**A**LOA will be held in Nashville next month. And some very important issues will be raised at the annual membership meeting.

One of the most frequent criticisms of ALOA that I have heard over the years is that the association doesn't respond to individual members as much as many of you would like.

I think this has been caused, in large part, because the only members who have a chance to vote for

officers are those who are actually able to attend the meeting in person. For many people, taking the time and money to travel to every ALOA convention isn't possible. Therefore, when the show is on the West Coast, not as many East Coast members get to vote.

The solution is at hand, however. On the agenda for this year's meeting is the issue of voting by mail. In order for ALOA members to be able to vote by mail, the by-laws of the association need to be changed, and this is what you'll be able to vote on in Nashville.

Therefore, I think it is critical that as many ALOA members as possible attend the Nashville show next month. In many ways, the future direction of the group will be decided by the votes cast at this meeting. So even if you don't normally get to ALOA, this is one meeting you won't want to miss.

**R**ecently, I met with ALOA staff and officers here in Chicago. Included in their planning are some excellent ideas to allow their professional staff to take a bigger hand in managing the association for the benefit of the members.

I consider this to be progress, and I, for one, will be casting my vote in Nashville. I hope you will express your opinion there too.

*Marc Goldberg*



**Marc Goldberg**  
Publisher

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# Mango's Message

**A**s if there isn't enough competition to battle with the alarm dealers nudging their way into the security industry, Roadside Network Center (RNC) selling out to AAA, and the super-mega hardware stores not only selling product for less than we can, but providing many of the services we do as well. Now there is a new rival with an old face, eager to wade in the locksmith pool.

AAA Mid-Atlantic recently announced the nation's first home repair and emergency service. That sounds harmless enough, until you see the list of services AAA is prepared to offer. Services such as:

- Roofing
- Plumbing
- Heating/ Air Conditioning
- Glass Replacement
- Electrical Work
- Drywall
- General Carpentry/ Remodeling
- Driveway Paving/ Repair
- Painting/ Wallpapering
- Masonry/ Concrete
- Landscaping
- Swimming Pool Services
- Appliance Repairs
- Siding
- Carpet/ Upholstery Cleaning
- Chimney Sweep



and yes, last but not least, Locksmith Services! And, according to a AAA representative, AAA is adding additional service options all the time.

Called the "Home Services Network" AAA has developed a 24-hour, seven-day-a-week, 365-day-a-year emergency home repair service and planned home improvement center.

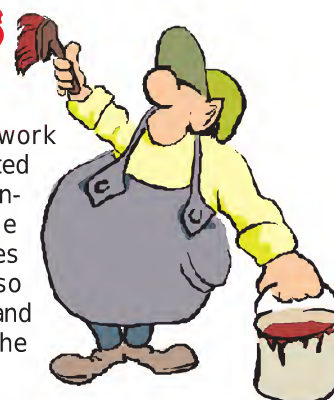
The service fee is broken into two categories. The base plan is \$19.95 per year for existing members and \$29.95 for non-members. There is also a \$49.95 member and \$59.95 non-member plan which includes four \$50.00 service credits which can be applied to the annual service fee costs.

## How It Works

According to AAA, whether it's a planned home improvement project, or a full-fledged emergency, all work is performed by AAA approved expert contractors.

## HOME IMPROVEMENTS

AAA offers a toll-free number which links customers to a Network contractor, thoroughly investigated and pre-approved by AAA. The contractor deals directly with the customer on pricing and services offered. Service payment is also arranged between the contractor and customer. AAA is not involved in the payment policy.



AAA also proclaims that the customer will not have to worry about encountering any nasty little surprises while the work is being done. The customer will be able to discuss the situation with the contractor, find out what to do to minimize the damage, establish the cost of the service call and learn exactly when to expect the contractors arrival.

AAA Mid-Atlantic will help make all the arrangements for the estimates, and proposals, and monitor how satisfied the customer is with the contractor until the work is finished.

## Contractor Credentials

According to AAA, all Home Services Network contractors have achieved a very good or excellent rating on a customer satisfaction survey conducted by AAA.

*Continued on  
page 8.*

*Greg Mango*

**Greg Mango  
Editor**







**Continued from page 6**

All contractors must pass a series of rigorous screenings and background checks with the County Consumer Affairs Department and Better Business Bureau. They must also have 50 customer satisfaction surveys done, show financial stability, and AAA will visit current work sites to ensure a high level of professionalism. All will have very good or excellent ratings on a Consumer Protection Agency report and on a financial report done by Dun & Bradstreet, their bank, or an equivalent source.

Contractors must also carry Worker's Compensation Insurance and \$500.00 (or more) per occurrence of Liability Insurance. And, where relevant, all will have up-to-date state and local licenses.

### **AAA Guarantee**

In the event that the customer has a dispute with a contractor, all contractors will have agreed to allow AAA to inspect their work, materials, and price, to resolve any disputes fairly between the two and to abide by whatever resolution AAA recommends. If the customer is not satisfied with the work they receive, AAA will act on the customers behalf to investigate.

If at any time the customer is not satisfied with the AAA Home Services Network, the customer can cancel for a full refund of the annual subscription fee.

### **The Testing Grounds**

AAA Mid-Atlantic is part of the nationwide, 40 million member AAA service organization based out of Heathrow, Florida, with 97 affiliated AAA Clubs and over 1,000 offices in the United States and Canada.

The Philadelphia metropolitan area will serve as the Home Services Network beta site for the nation. The AAA Home Services Network is now available to homeowners in the Bucks, Chester, Delaware, Montgomery, Philadelphia and New Jersey counties. According to Jeff Johnson, director of AAA Home Services Network, "Never again will homeowners have an emergency home repair, or plan a home improvement job and wonder how to get the job done."

In addition to the emergency repair service, members have access to the Contractor Network, which is dozens of pre-approved contractors who are available for a broad range of home improvement projects and general home repairs.

### **What Locksmiths Can Expect**

As stated in the services offered, AAA is offering locksmith services. This is being done in the same manner as the automotive services. A locksmith will be contracted by AAA as a service provider. When a call comes

into the AAA Home Services Network for a rekey, lock-out, lock repair or other locksmith service, the locksmith contractor will be notified to provide the service.

When asked about any price structures associated with the Home Services Network, an AAA representative said it does not dictate prices, however, depending on the job, two to three estimates may be recommended.

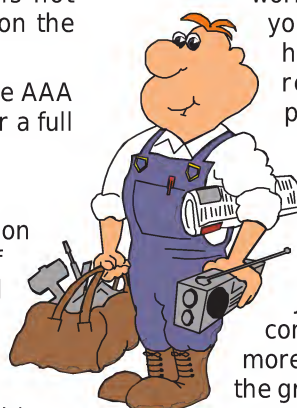
Depending on which side of the fence you are standing on, this could either be a lucrative opportunity for you, or a serious threat. I don't need to tell you that AAA has immense national recognition, and along with that recognition, 40 million members. Plus, the Home Services Network is being offered to non-members as well.

If you are one that chooses to join AAA as a service contractor, I can conceivably see how you may have more work than you can handle. On the other hand, if you are one competing against AAA, you may have a tougher battle, provided all you do is residential service. For those servicing primarily commercial accounts, you will hardly notice the influx by AAA, until it decides to approach that market as well.

As for now, only those in the Lower Bucks, Chester, Delaware, Montgomery, Philadelphia and New Jersey counties need to worry about more competition. It won't take long, however, before more and more cities, towns and counties fall into the grip of AAA.

The other factor that plays into this scenario even more than before is the name AAA. I have written editorials in the past ("Stay Away From AAA" March, 1996) regarding AAA's legal obligation to aggressively prevent any unauthorized use of its federally registered trademark. AAA is bound by law to defend against trademark infringement. Failure to do so can lead to the loss of the AAA trademark. Now that AAA is attaching its name to the services offered by its Home Services Network — Locksmithing included — I'm sure it will take an even more aggressive posture when it comes to infringements on the AAA name. Just something to think about.

Depending on how you look at this, AAA Home Services Network could offer huge profits to your bottom line, but it won't be for every one. Just as with the automotive service, there will be limited numbers of service providers per given area. The rest will have to fend for themselves, which may be just the way you like it. Not everyone will want to be an AAA service provider, or will even worry about AAA entering the home repair business, but it's always good to know who else is stomping on your turf. **TRL**





May 1998

# Letters

*The National Locksmith* is interested in your view. We do reserve the right to edit for clarity and length.

## Best Wishes

Greetings from the Mid South. I wish I was in Florida this time of year but the pictures in my computer are as close as I am going to get. My recent acquisition of this laptop is exciting and promises to aid me in the quality and quantity of work I am able to provide to my customers. I would prefer the warm feeling of laying in the sun to the aggravation of learning to use a computer so late in life, but experience and success come with a price.

I am thankful for the opportunities that locksmithing has afforded me and my family. We would like to thank *The National Locksmith* for the valuable information, insight and support it provides to the industry.

Warm wishes and an exciting future for our industry.

*Leo Koulogianes  
Tennessee*

## Big Brother's Intrusion

This letter is in response to Mango's Message (March 98). You and other alleged locksmith

supporters and the Illinois legislative have created a Bureaucratic Frankenstein in the form of locksmith licensing. You said so yourself in Mango's Message, "There is little you can do except pay or quit."

I'm sure the bureaucrats just love the amount of money locksmiths have to pay so they can squander it. I suspect that a lot of the money will go toward getting re-elected. This "law" was passed under the guise of "protection." I don't think so. I believe it is all about money. If you were honest enough to admit it, you would agree.

For me to practice in your state according to your figures it would cost me \$678.80, that doesn't count the million liability. I'm 65 and no dummy. I am sure the insurance industry had a hand in setting the rates. You stated that a lobbyist is retained at a minimum of \$12,000 and can easily double that. Who pays that fee? You and I both know, don't we?

I am a retiree and have been a practicing locksmith in Michigan for 13 years. Locksmithing is mainly a hobby for me now, although, the income produced from it has increased over the years. I am a good locksmith (excuse the ego) and should I depend entirely on what I earn at today's cost of living, I would be unable to survive. The roughly \$700 I would have to pay in fees would severely limit my ability to practice.

You take the typical political stance, "I'm not saying a locksmith licensing law is a good thing or a bad thing." Personally I think it is a bad thing and just one more of "Big Brother's" intrusions into the life of private citizens regulation and tyranny.

*Tom Seager  
Michigan*



**Editors Note:** Thank you, Mr. Seager, for your response to my editorial that obviously touched a nerve, however, your opening statement is incorrect. You state: "You and other alleged locksmith supporters and the Illinois legislative have created a Bureaucratic Frankenstein in the form of locksmith licensing."

I personally had nothing to do, nor was I even involved, with the Illinois locksmith license. I was not even living in Illinois when this law was introduced into legislation. I was living in Texas working for another magazine. Sorry, I am simply the messenger of the news, not the maker.

You then accuse me of taking the typical political stance when I said: "I'm not saying a locksmith licensing law is a good thing or a bad thing."

You're absolutely correct, I did take the politically correct posture, because my opinion (after the fact) one way or the other is of no relevance. It will not change the fact that Illinois requires a locksmith to be licensed to operate. That's the law. I don't like the fact that 35% of my total income goes to the government for taxes. Unfortunately, I don't believe my "opinion" will change that either.

**The National Locksmith**  
**1533 Burgundy Parkway**  
**Streamwood, IL 60107**  
**Attn: Editor**



**Continued from page 12**

**The best way to influence change through opinion is before the fact, not after. After the fact is often too late.**

## Lazy Locksmiths

Is cutting keys getting so cheap that we as locksmiths are becoming so uppity that we are giving all of the key cuts to hardware and dime store operators?

This past week my mailman had been to two different locksmiths to have a Weiser 1559 key cut. The first one told him Weiser discontinued the key. The other told him that he did not carry Weiser products. Neither tried to cross reference the key.

The hardware fellow cut it on the wrong blank, but told him that it would work since Ilco had bought out Weiser and the keys were interchangeable with all of Ilco's.

It took me less than a minute to look it up. Ilco X1054WA fit so does Dom X59WA, Star 5WR1, Natl/Curtis (N) WRI, and (C)WR2.

I told him I was sorry and did not know why either locksmith wouldn't think to cross reference his key. It's a shame these other shops would not carry

blanks and cross reference books even if they don't carry a brand like Weiser.

*Harry Daniels  
California*

## Be Thankful

In reference to the letter entitled \$15.00 car openings by who? (March 1998), I took exception to the last sentence stating "The majority of people who lock their car keys inside the car expect free service for their stupidity."

Yes, it is frustrating for a locksmith to provide a service to a person who expects the service free, but do not EVER assume they locked their keys in the car because they are stupid. These "stupid" are our customers and the reason we are in business. They are lawyers, doctors, single mothers and working people, each with who knows what going on in their heads. This is not a surprise considering the fast paced world we live in now.

I can imagine how quickly I would get paid if I approached a person who had locked their keys in their car and said "Sir/Ma'am, because of your STUPIDITY, I am charging you \$45.00."

*Christie Arsenis  
Texas*

## Kissless in Ohio

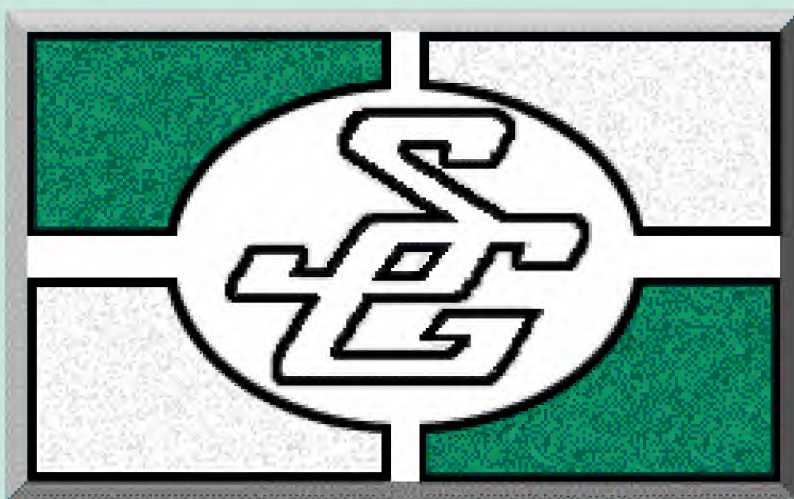
After reading Mango's Message "It's the Law" (March 98), on Illinois licensing, I have a few questions.

1. After taking NLS (certificate of achievement courses), wouldn't it be nice if they qualified the same as the test given by ALOA?
2. Does the grandfather clause apply to Illinois?
3. In order for me to take ALOA's course (test) I must drive 100 miles north, take a day off of work and spend fifty to eighty dollars for tests. Is there any other way to get certified?

After 28 years of practice, numerous certificates, awards and seminars, I feel as if someone is lining their pockets at \$450 a year, \$50 fingerprinting, \$128.80 testing, 1 day lost salary, 200 mile round trip and gas. All this without being kissed!

P.S. If New Jersey police want to charge for car openings, seems like they also need to be registered, certified and licensed.

*Brad's Lock & Key  
Ohio*



**Make Sargent & Greenleaf's  
Comptronic locks your choice for  
electronic safe locking solutions.**

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## Just For Locksmiths

I just read your March, Mango's Message, concerning the new locksmith law that Illinois passed, and maybe I overlooked it, but there are a couple of questions that I am curious about.

1. Does Wal-Mart or other similar type of businesses that make keys, have to get licensed?
2. Do all police and wrecker services have to get a license if they continue to open cars?
3. Who gets the money from these licenses?

I would be interested in knowing the answers to these questions.

*Marvin Golden  
E-mail*

**Editors Note:** I presented the previous questions from Marvin and Brad to a Board member of the Illinois Department of Professional Regulations (Kathy Zaniolo) and felt it was best for her to comment on. The following is her response.

### "It's The Law" for All

The Illinois Locksmith Licensing Law did include a one year

"grandfather provision." This expired December 31, 1997.

The law was passed to give the people of Illinois assurance that the Locksmiths they call have a certain level of training, carry liability insurance and have passed a criminal background check. It was not passed to guarantee our jobs, although I am told, no licensed occupation has ever become extinct.

Specific exemptions were given to allow certain occupations to perform services which are a direct overlap with locksmith service. For example:

Police officers may perform openings in an emergency situation. However, they may not offer this service in a non emergency situation and they may not offer this service if they are off duty. If they do, they must obtain a license.

Towing services may open vehicles to perform services but may not advertise "opening service" at their place of business, on their trucks, or in their advertising.

Retail merchants may cut keys. They may not rekey locks or advertise service determined by the Illinois Department of Regulation to

be a locksmith service without a license.

Carpenters may install whole locks. They may not rekey or service the product other than to install it without obtaining a locksmith license.

The cost of licensing must be covered by the fees collected. The governor will not use general funds to enforce licensing laws. In Illinois the fees go into a dedicated fund which provides the funds for the Illinois Department of Professional Regulation to enforce the licensing laws. The cost of our three-year license is \$150 per year (SAVTA is \$161, ALOA is \$125, DHI is \$156 per year.)

We have seen two immediate benefits of licensing. First, both the Locksmiths and Alarm companies are allowed under their own licenses to do Access Control. Second, the tide of Locksmith wannabes has been slowed. Only the serious and proficient locksmiths are applying for licenses and sitting for the examination.

*Kathy Zaniolo  
Locksmith Board Member  
Illinois Dept. of Professional Regulations*

**TRL**



**It's not safe unless  
it's Schwab Safe.**

[Click here for more information](#)



# Security Café

**DROP IN FOR  
TOOLS, TECHNOLOGY  
& EQUIPMENT**

## Singertech Neutralizer

**CIRCLE NUMBER  
261**



Singertech's lever neutralizer is a new tool that allows disassembly and opening of doors with Schlage Rhodes and other Grade 1 and 2 levers without working keys. No special technique is required. It enables the user to consistently defeat levers in less than sixty seconds without damage to the lock. What a time saving tool for opening locks with high security cylinders and locks that will not yield to picking attempts.

## Corbin Russwin Introduces New Lockset

**CIRCLE NUMBER  
263**



Corbin Russwin is introducing the CL3900 Series Grade 2 Key-In-Lever Cylindrical Lockset. The CL3900 Series is a full featured lockset offering anti-rotation through bolts, independent lever return springs, a 3-1/2 rose to cover the new ANSI hollow metal door cutout, and a patented lever release mechanism which allows the outside lever to disengage when pressure is applied in the locked condition.

## Custom Key Chains

Milman Manufacturing can customize key chains to advertise a store, company, club, or other business. Following die and setup charges, key chains can be produced for as little as \$2.45 each for the minimum order of 250 units. Color is available.

**CIRCLE NUMBER  
262**



## Sargent & Greenleaf Combination Locks

**CIRCLE NUMBER  
264**



Sargent & Greenleaf adds UL Group 2M combination locks to their product line. These new mechanical combination locks are the 6600 Series.

The 6600 Series design meets the new requirements of Underwriters Laboratory's standard for high security combination locks (UL768) Group 2M. The new category requires at least 2 hour resistance to expert manipulation as well as all other operational and security requirements of the standard.

## Marray Introduces The DOR-COR™

Marray Enterprises, Inc., is now offering the DOR-COR drilling fixture to installers and technicians. The DOR-COR fixture places a 3/8

**CIRCLE NUMBER  
265**



inch wire chase hoe through a standard 20 minute fire rated, or solid wood door, in around 3 minutes.

## Stanley Introduces New Spring Lock Bolt

**CIRCLE NUMBER  
266**



A new bright brass finished CD2003 Spring-Lock Barrel Bolt (#75-6400) has been introduced by Stanley Hardware. The new barrel bolt is one of the products in Stanley's home security "Safe At Home" series.

The new Spring-Lock Barrel Bolt has a patented spring-locking action that allows it to remain in a locked position resisting efforts



of would-be intruders to shake or jar it loose as could occur with a traditional barrel bolt. The spring-action bolt, when open, also serves as a preventative mechanism reducing the possibility of children locking themselves into a room.

## Keys Wholesale Distributors "The House Key"



**CIRCLE NUMBER  
267**

This new and innovative key blank with its unique and decorative head in the shape of a house is available in the KW1 and SC1 keyways. Each key comes in 8 attractive colors. There are 50 keys assorted in a counter display jar, 1 keyway per jar. This one-of-a-kind key blank sells great as a novelty item and is ideal for those who want to easily identify which key is for the house.

## Von Duprin Alarm Kit

A new AC power supply is now available for use with the Von Duprin® ALK alarm kit. The PS9 power supply provides 9VDC power to operate the alarm kit, which is normally battery powered.

The ALK/PS9 combination is available for all Von Duprin touch bar exit devices, including 33, 35, 98, 99 and 22 series. It is designed for use with surface vertical rod devices, as well as with rim, mortise, and concealed vertical rod devices.

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268**



Continued from page 16

# SECURITY CAFE

## Securitron Exit Delay System



The UL listed EXD-1 now includes the MXD-1 door movement exit delay initiation device. The MXD was awarded Judges Choice from the Security Industry Association's New Product Showcase at the recent ISC East '97.

Securitron's modular concept of exit delay allows complete freedom to choose the method of detecting exit delay; the MXD-1, the reliable TSB-3 series Touch Sense Devices, fire-rated mechanical panic hardware or the Latch Monitor series of latch detection devices.

## Lockmasters® New Magnum Bullet™ Drill Rig

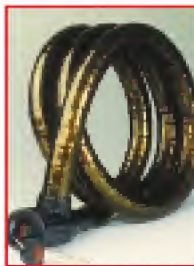


The Bullet is a heavy duty "companion" drill rig with the same powerful drill capacity as the standard 4 5 7 Magnum®. Designed with new barrel and quill assembly technology, the Bullet is lightweight, quick and easy to set up, and offers template drilling. The template provided with the Bullet includes drill points for the fence, lever screw, relocker and scope for S & G, Ilco, and LaGard locks.

## ABUS Mongoose Flexible Cable #880

The ABUS Mongoose #880 is an innovative and economical light weight

(4.9lbs.) option to maximum security for motorcycles. It's ingenious design combines strength and resistance to boltcutter attack, and easy coiling down to a 12 inch diameter.



The ABUS Mongoose #880 features a 7/8 inch in diameter freely rotating, steel alloy link which protects a 5/16 inch twisted aircraft steel cable. The steel links are specially sized so bolt cutter jaws cannot grasp and sever the link. The Mongoose features a 5 wafer drill protected keyway that offers hundreds of key options.

## American Lock® Offers New Back-Lit Sign

American Lock Company announces



availability of a new back-lit promotional sign that's ideal for locksmith shops.

The 13" x 36" sign is suitable for hanging from a ceiling or wall. It features the American Lock logo and an image of its distinctively shaped Model 700 padlock outlined in vibrant neon colors, with the brightest backlighting of any POP sign available. The lightweight sign comes complete with a snap-in face panel and special UV-treated neon ink-providing a simulated neon effect at a fraction of the cost of neon. **TNL**

# SRI

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**COVER  
STORY!**

***Today's automobiles are forever changing. Just when you think you have them down pat, there they go changing again.***

Remember when VATS came out on the Corvette? Boy, that was a big thing. Will the locksmith be put out of business because of this funny little pellet built into the shank of the key? It turns out that with a little thing called knowledge the VATS nightmare was a lot of nothing. There was originally only 15 different pellets and because of technical problems there are now only 14 being used.

This is a very simple system. VATS cars do offer more security for the owner of the car and require some specialized equipment by the locksmith. Let me ask you this, do you charge the same to originate keys for non-VATS cars as you do for VATS equipped cars? Almost all locksmiths would probably say they charge more to cars with VATS. Why? The answer is a simple one; VATS cars require specialized equipment, special keys, knowledge and take more time to complete. I think VATS has turned out to be a money-maker for many that do them on a regular basis. The equipment is easily paid for after a couple jobs and then the customers are paying you for your time, experience and knowledge.

What about Transponders (*see photograph 1*)? Here are a few questions I keep hearing over and over again.

# VATS & TRANSPONDERS

1. How do they work?
2. Will this be the end of the automotive locksmith?
3. Is someone going to have a device that can do them all?
4. What are the car owners going to do when they are stuck in the middle of nowhere?
5. How can I tell whether a key has a Transponder in it or not?
6. What is available right now for the locksmith?

Let's go through the answers to these questions step by step.

## ***How Do They Work?***

There is an induction coil with an antenna ring (encased in a circular plastic trim piece), surrounding the ignition cylinder. When activated by the key, a Radio Frequency signal is sent out in a circular tunnel field. This tunnel field is usually within a 2-3 cm area. The close area field is necessary so as not to pick up other transponder signals.

When you insert a transponder key into the ignition cylinder the antenna ring will energize the transponder pellet (chip) in the bow of the key. Once the pellet (chip) in the bow of the key is energized it sends a RF (radio frequency) signal back to the antenna ring. This signal is made up of a unique alphanumeric value. (There can be millions of different Transponder codes.) The signal is then sent to a small computer box commonly referred to as an Immobilizer Control Unit, which can sit alongside the steering column or in the dash. If the value in the transponder key is correct then the ECM (Engine Control Module) will be activated (*see illustration A*).



by  
**Michael Hyde**

***1. A sample of the variety of Transponders currently available.***







### Is Someone Going To Have A Device That Can Do Them All?

Not likely. I say this because there are so many different manufacturers out there each with their own slightly different systems. Whereas the concept is the same for all, there are slight variations to them all. The manufacturers are not going to give away their proprietary technology that they spent money to develop to anyone or anybody.

### What Are The Car Owners Going To Do When They Are Stuck In The Middle Of Nowhere?

Get really mad, wouldn't you?

Transponders have been in Europe for a longer period of time than in the U.S. Americans also do things differently than everyone else. We do not want to wait for anything. I am hoping there will be an uproar over this. Can you

imagine the first time a lawyer goes into his local Lexus dealer and finds out that it will cost him up to \$3,000 for a new key when all other keys are

gone? The dealer tells him they have to replace the Engine Control Module before any new Transponder keys can be programmed! This is true on all 1998 Lexus models and some '98 Toyota Avalons and Camrys. Can you say LAWSUIT?

**2. This device is called the "NGS" tester, which stands for "New Generation Star" tester.**

### How Can I Tell Whether A Key Has A Transponder In It Or Not?

Ilco sells a little device that when a Transponder key is inserted into it, a light will flash to indicate that there is a Transponder and what type it is. The Ilco model number is "TD 3A." This device is helpful whether you have a mobile service or a shop. It can take the doubt out of the process of determining the correct keyblank for duplication.

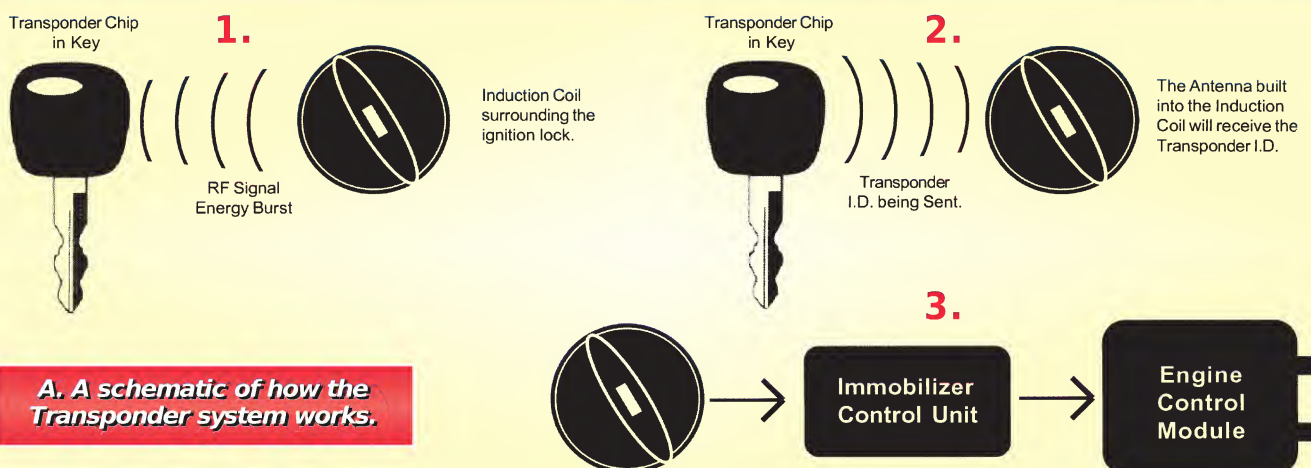
### What Is Available Right Now For The Locksmith?

The first thing you need is detailed knowledge of automotive Transponders. *The National Locksmith* sells a book called Guide to Transponders. Get one as soon as you can. This is an in-depth look at the different systems of automotive Transponders and how they work.

In some cases the ECM and the Immobilizer Control Unit are combined as one unit. The ECM controls the battery current to the starter, fuel injection system, and ignition electronics. This process usually can take less than a second to complete.

### Will This Be The End Of The Automotive Locksmith?

I would have to say no. There are still many millions and millions of cars and trucks out there without Transponders systems in them. I do think it will be a challenging task ahead for us but not an impossible one. Remember there are flaws and weaknesses in everything man-made.



**A. A schematic of how the Transponder system works.**





**3. This new device is called the D.A.R.T., which stands for "Diagnostic And Reprogramming Tool."**

**If you do work on Ford products** you probably already have or will soon come across the 1998 models that are using PATS 2. This newer version of PATS is not locksmith friendly at all. PATS 2 requires a diagnostic device to actually be plugged right into the car to start the Transponder programming mode. This device is called the "NGS" tester, which stands for "New Generation Star" tester (see photograph 2).

This device is sold by National Auto Lock (650) 757-0700. The NGS can program all PATS 2 keys in 10 minutes and program PATS 1 keys in eight minutes instead the normal 45-minute wait. The NGS is good for all Ford - Lincoln - Mercury cars & trucks.

In case you didn't know Chrysler, Dodge and Jeep will have their own Transponder system. This new system will also require a diagnostic device to program new Transponder keys when all have been lost or when only one is available. This new device is called the D.A.R.T., which stands for "Diagnostic And Reprogramming Tool" (see photograph 3).

This device is sold by National Auto Lock (650) 757-0700. The Chrysler system requires a V.I.N. specific password. This password is available to the car owner through Chrysler's Customer Care 800 number, and the dealer. The password is also included on the original factory invoice.

In closing I would like to say that the automotive locksmith business is changing a lot right now and only time will tell how it all plays out. But for now, there are still plenty of cars and trucks out there without Transponders. **TRL**



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(1)

*This time out we take a look at the 1997 Ford Expedition XLT.*

**COVER  
STORY!**

## VATS & TRANSPONDERS

One of the leading U.S. automotive manufacturers featuring Transponders is Ford. Ford currently features Transponder technology on more models than anyone else. The following is the servicing procedures for the 1997 Ford Expedition XLT featuring Transponder technology. This will be a two part feature that will conclude next month.

## Servicing the 1997

(Part 1)



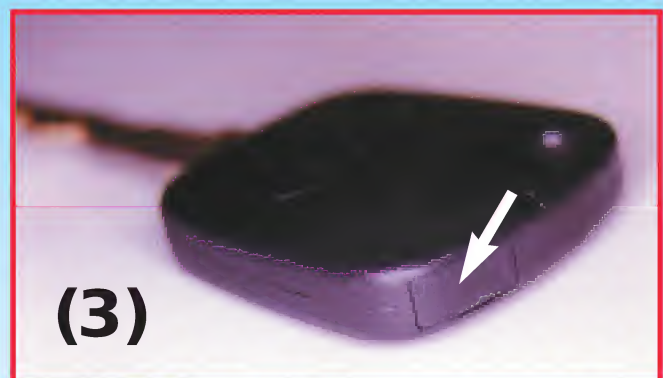
## Expedition XLT

by Michael Hyde



(2)

*This model is equipped with the new Ford 8-Cut Transponder System also called P.A.T.S. (Passive Anti-Theft System).*



(3)

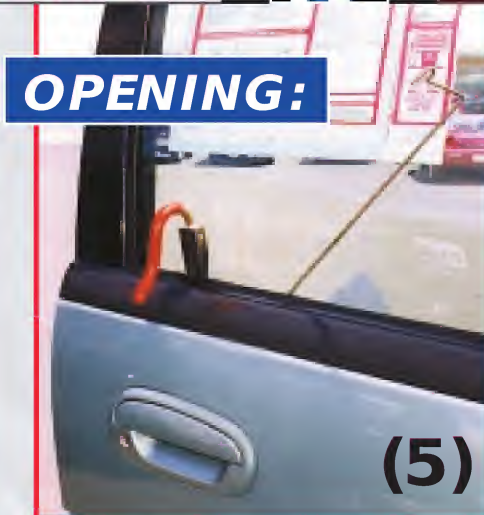
*There is a spot on the top edge of the key where the P.A.T.S. chip was inserted.*





(4)

If you insert a key that is not equipped with a PATS chip or a PATS chip not recognized by the system and turn on the ignition, the "THEFT" light on the dash will light up and stay lit. When you insert the correct key the "THEFT" light will stay lit for only a few seconds.



**OPENING:**

(5)

To open the car is pretty easy, since the linkage is vertical and exposed. Use a good light, if needed, and a vertical slide linkage tool to grasp the rod and pull upwards to unlock the door.



**IGNITION:**

(6)

The ignition lock mounted in the column.



(7)

To service this ignition with or without a Transponder is the same. To remove the ignition cylinder, simply insert a working key and rotate it clockwise to the first accessory position. Now insert a probe into the access hole in the plastic steering column shroud to depress the active retainer. Slide the cylinder out of the column.



(8)

The ignition cylinder being removed.

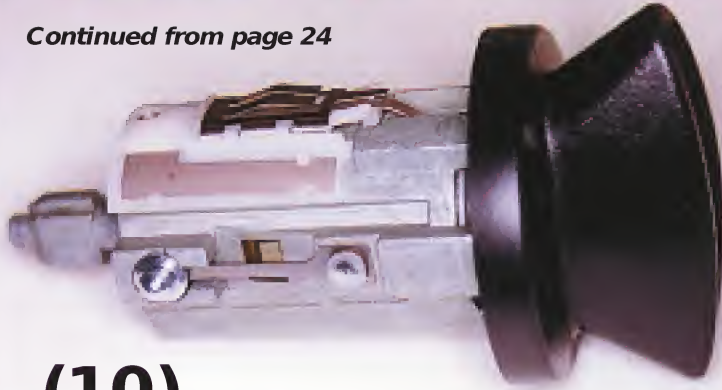


(9)

A view of the ignition housing. In the housing you can see the slot where the lock cylinder tailpiece interlocks to the housing switch.



Continued from page 24



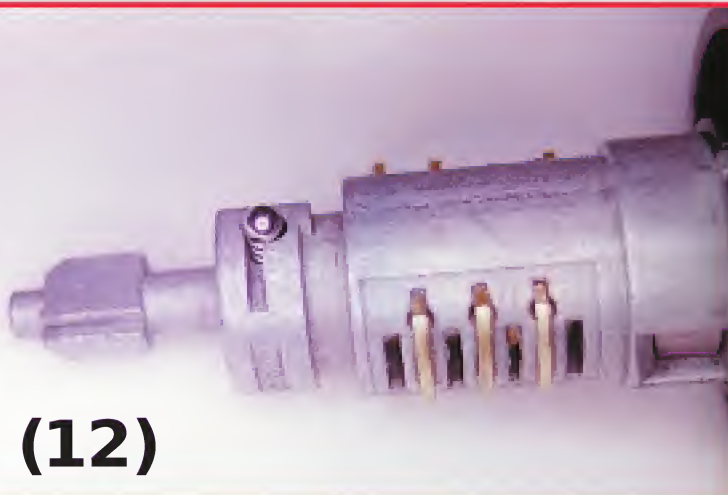
**(10)**

*The ignition cylinder is pictured.*



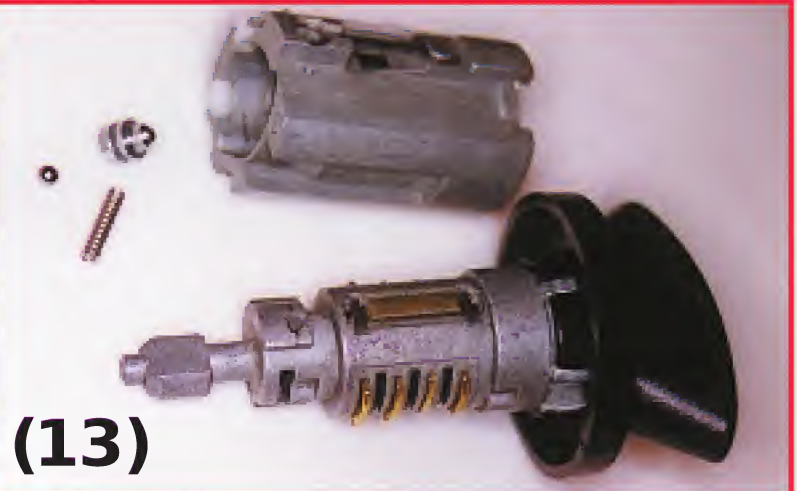
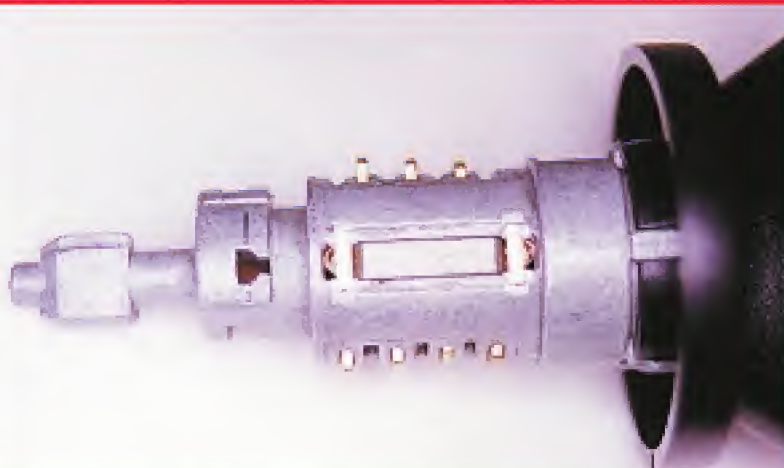
**(11)**

*To disassemble the ignition cylinder, insert a working key and rotate the cylinder clockwise as far as it will turn and then use a small probe to depress the ball bearing in the rear of the lock. Once the ball bearing is depressed you will be able to rotate the cylinder even farther and then slide the cylinder plug out. The ball bearing will eject into the cavity the active retainer occupies. You can gently lift the active retainer out to see the ball bearing. When re-assembling, you will use this cavity to reload the ball bearing, they have made it quite simple.*



**(12)**

*The ball bearing and spring as they rest in the cylinder plug.*



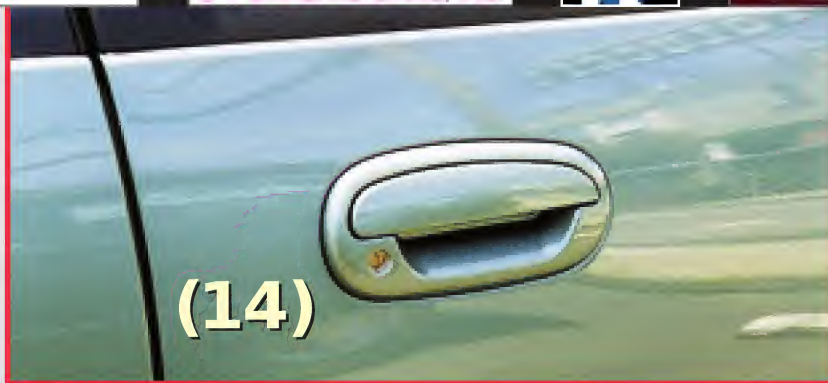
**(13)**

*The ignition cylinder plug contains seven wafer tumblers in positions 2 through 8. The lock uses a side-bar. The tumblers do not go above the shear line when an incorrect cut key is inserted. Be careful not to let the buzzer activator drop out. Strattec replacement part number for an ignition service package is 703370. The tumblers for the ignition can be found in the Strattec Ford 8-cut Pinning Kit 703373.*



## DOOR LOCK:

The door lock cylinder is interrogated into the door handle.



Removing the door panel is pretty easy.



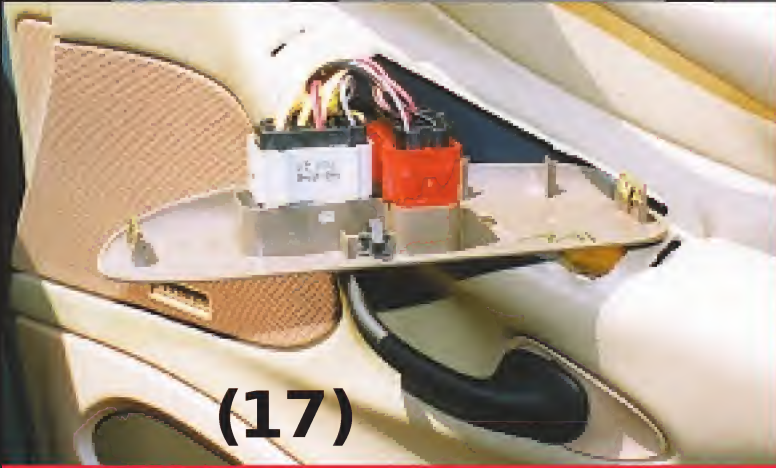
First, unsnap the power window and power door lock control trim.



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**(17)**

*Disconnect the wiring attached to the switches.*



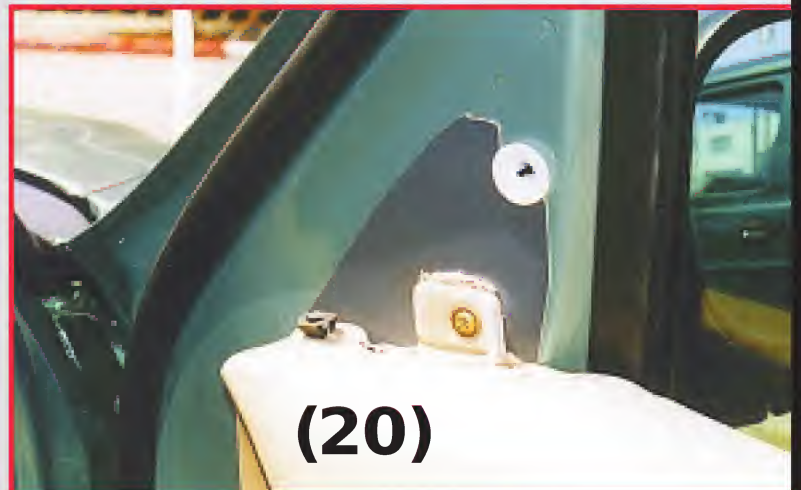
**(18)**

*Remove the hidden panel screw located in the power window and power door lock control cavity.*



**(19)**

*Unsnap the trim cover on the upper forward section of the panel.*



**(20)**

*Remove the panel screw.*



**(21)**

*There is plastic trim cover behind the inside door release lever. Unsnap the cover.*



**(22)**

*Remove the 10mm bolt that holds on the lever.*

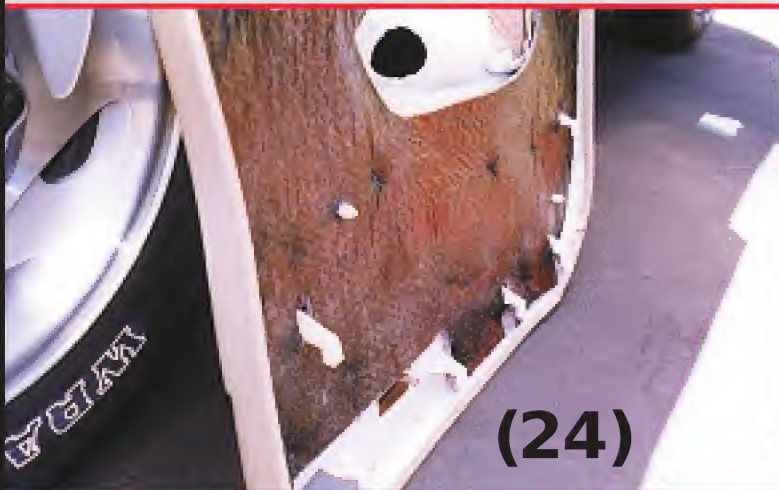


Continued from page 28



**(23)**

There is a marker light located on the lower rear section of the panel. Unsnap the lens and then remove the panel screw.



**(24)**

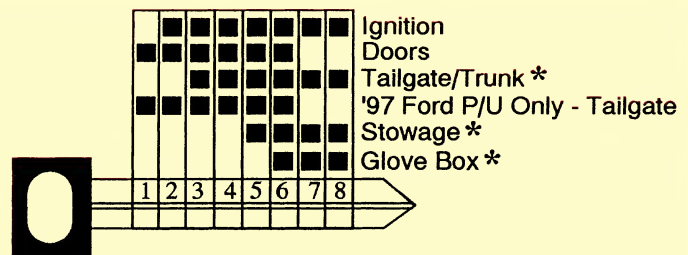
The panel can now be removed. The door panel use hook type fasteners. You will have to lift upward on the panel to remove it.



**(25)**

A view of the door panel removed. You will have to gently pull back the thick noise and moisture door liner.

Key Blanks: Ilco - H72PT Silca - FO38RT3  
HPC 1200CM: CX101  
Spacings: .845, .753, .661, .569, .477, .385, .293,  
Depths: 1 = .354, 2 = .329, 3 = .304, 4 = .279, 5 = .254  
Cut oto Cut Spacing: .092  
M.A.C.S.: 2  
Cut: Bot to Tip



# 1 DEPTH			# 2 DEPTH				# 3 DEPTH				# 4 DEPTH			# 5 DEPTH		
TRY 1	TRY 2	TRY 3	TRY 1	TRY 2	TRY 3	TRY 4	TRY 1	TRY 2	TRY 3	TRY 4	TRY 1	TRY 2	TRY 3	TRY 1	TRY 2	TRY 3
11	21	31	11	21	31	42	11	21	31	42	21	31	42	31	42	53
12	22	32	12	22	32		12	22	32		22	32	44	32	43	
13	24		13	23	33		13	23	35		23	33		33	44	
23	34		23	24	43		23	24			24	43		34	54	
33	35		33	34			33	34			34	53		35		
			35	44			43	44			35	54		45		
							53	45			45			55		
							54	55			55					

Next month we will conclude the Ford Expedition XLT by servicing the door lock, trunk/hatch lock and programming procedures. See you then. **TRL**



New IC Products from

**ASSA**



by  
Sal Dulcamaro, CML

When ASSA replaced its older Removable Core (RC) cylinder with an Interchangeable Core (IC) cylinder, it maintained a high level of compatibility with the older product line. The new IC is ultimately much more versatile by the fact that the new design removed all of the keying limitations in regards to the operating and control keys.

There is a subtle, but distinct difference between removable and interchangeable core. Both are key removable lock cylinders. Removable core cylinder, however, implies a core that will install into a minuscule product line, often meaning just one type of lock or locking device. Interchangeable core, by contrast, implies a core that can be installed interchangeably into many different locks or locking devices. When the new IC cylinder was introduced, only a single mortise/rim style housing was available. The wider product line to accept the new style core is now starting to be introduced.

#### The ASSA 6000 IC Deadbolt Lock

The newest ASSA product to accept the interchangeable core is its heavy duty tubular deadbolt, shown in photograph 1. Shown in side view in photograph 2, the IC version of the deadbolt is virtually identical in

construction to the standard deadbolt lock. Photograph 3, shows the parts of an ASSA deadbolt unassembled. It has a heavy duty one inch throw bolt and a shield for the bolt throw mechanism called the "hard hat."

Positioned over the top of the bolt mechanism when installed in the door, the hard hat blocks access to the mechanism by an ice pick or similar attack trying to bypass the keyed cylinder. The lock is secured onto the door with two 1/4 inch diameter bolts, and a cover plate on the inside conceals the bolt heads for a more attractive installation.

The lock is further strengthened by a heavy duty strike plate/reinforced strike box shown in photograph 4. The solid metal back plate of the strike box has



1. The newest ASSA product to accept the interchangeable core is its heavy duty tubular deadbolt.







3. The parts of an ASSA deadbolt unassembled. It has a heavy duty one inch throw bolt and a shield for the bolt throw mechanism called the hard hat.



4. The lock is further strengthened by a heavy duty strike plate/reinforced strike box

two offset angled holes for long screws to securely anchor the device in the stud behind the door frame. The back plate also shields the end of the bolt from being hammered or forced inward, if it were attacked from the frame side.

The ASSA deadbolt is normally designed for installation into a 1-3/4 inch diameter cross bore hole. Retrofitting into the larger more common 2-1/8 inch diameter mounting hole is possible with a special adapter plate. An adapter is required on both sides for proper installation.

The 6000 IC deadbolt lock is available in both single and double cylinder versions in a variety of



5. A new style V40 IC cylinder being removed from the housing of an ASSA 6000 IC deadbolt lock with its control key.



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different hardware finishes. The locking bolts come in both 2-3/8 and 2-3/4 inch backset in standard and drive-in style.

#### The New Style IC Cylinder

*Photograph 5*, shows a new style V-10 IC cylinder being removed from the housing of an ASSA 6000 IC deadbolt lock with its control key. With the core removed in *photograph 6*, the "figure 8" shaped cavity reveals the raised surfaces inside the housing that interact with lateral slot at the back end of the core. A rubber stop at the back of the housing cavity opening acts to take the slack out of the installed core.

An old style Twin 6000 removable core is at the left in *photograph 7*, and new style Twin V-10 interchangeable core is shown at the right. The locking lug of the control sleeve is wider in the older style core, but the core housings will accept both styles of core. The front surface of the extended locking lug is what retains the core in the housing.

The original RC design had considerable keying and pinning limitations, especially in relation to master keying. The limitation was that only certain key cut depths could be used for control keys. This was not necessarily overly restrictive when designing a new master key system with the pinning rules of the RC design taken into account. The major limitation occurred when trying to integrate master keyed cores into a previously designed master key system where the RC design was not taken into account.

It would often be impossible to create a control key that could pull the cores when using existing key changes in the master keying charts. That would ultimately prevent the inclusion of RC cylinders in many old master key systems.

The new ASSA IC has eliminated all such restrictions, by using a pinning system more closely resembling the Best-style cores. Although the pinning stacks are different for ASSA, that method involving build-up pins allows for virtually unrestricted use of key biting combinations for change keys, master keys or control keys. More complete details of the pin stacks and pinning and keying rules can be found in my article on that subject in the May, 1997 issue of *The National Locksmith*.

#### The ASSA #2 IC Padlock

The first ASSA padlock to accept the interchangeable core cylinder is a modification of the original #2 padlock shown in *photograph 8*. This will allow ASSA padlocks the same quick change ability as other locks that accept the ASSA interchangeable core. The core is being pulled with the control key in *photograph 9*.

Although the padlock and deadbolt lock were intended to



6. The figure 8 shaped cavity reveals the raised surfaces inside the housing that interact with lateral slot at the back end of the core



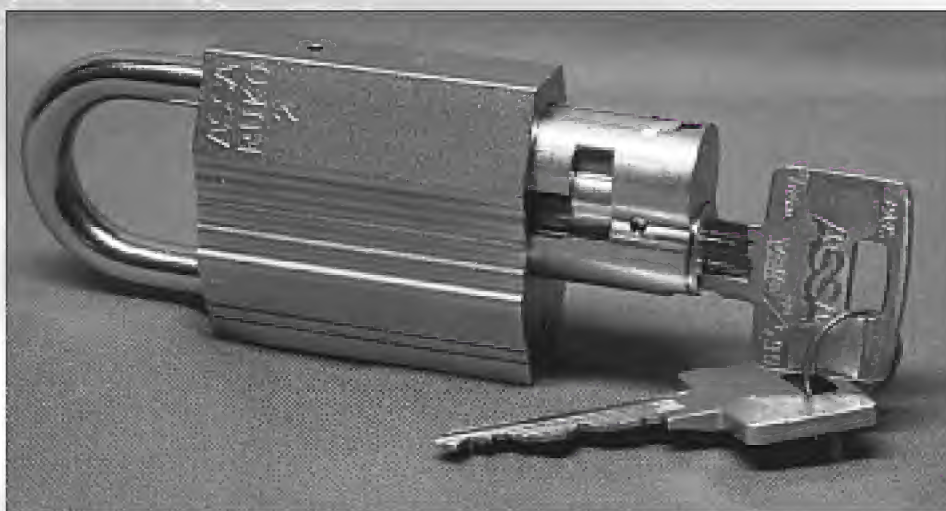
7. The old style Twin 6000 removable core is at the left and new style Twin V-10 interchangeable core is shown at the right.

expand the uses and capabilities of the newer design interchangeable cores, the old style removable cores should also fit into the core housing openings of both the new padlock and deadbolt designs. An end view of the padlock in *photograph 10*, with the core removed, shows the inside of the cavity to be nearly the same as that of the IC deadbolt.



8. The first ASSA padlock to accept the interchangeable core cylinder is a modification of the original #2 padlock.





9. The core being pulled with the control key.

I'm not sure if the IC padlock will have the same variations as the standard #2 padlock, such as variable shackle lengths and key retaining or non-key retaining function. The lock that I photographed was non-key retaining, but I wouldn't be surprised if the different shackle lengths and functions would be available (if not now, in the near future).

#### Product Expansion

The deadbolt and padlock are the

first ASSA products beyond the standard mortise/rim cylinder to accept the interchangeable core. The new ASSA technical service manual doesn't identify any other specific locks that will accept the IC. I'm certain, however, that ASSA has additional locks already planned for inclusion in their product line with IC capability. Other products included will be ultimately decided by customer and dealer demand, so expect continued expansion of IC capable ASSA locks.



10. With the core removed, the inside of the cavity shows to be nearly the same as that of the IC deadbolt.

If you are an ASSA dealer and would like to get the new up-to-date technical service manual, or if you are just a locksmith who might be interested in the ASSA product line, you can contact ASSA at: 718/927-2772. FAX: 718/257-2772. **TNL**



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# Necessary SAFE CRACKING TOOLS



by  
**Dale W. Libby, CMS**

I am going to break this article into two parts, the software and the hardware sections. The hardware part is simple. This include the tools you should have in your active safecracking collection to meet and beat ancient to modern safes.

The other segment will deal with the software (not computer stuff), which is what is in your head, what you have learned, and concept awareness. Both segments must be put together and integrated to make a complete safecracker. You never stop learning, and in fact, that is why you read this and other articles on safecracking and safe servicing. To learn, and hopefully remember.

First, let us discuss the "E & E" part of successful safecracking. This refers to "education" and "experience." Both are necessary to be proficient. Before becoming a safecracker, you must have a basic education on safe combination lock servicing and troubleshooting. This is a must!

Although combination locks are relatively simple, servicing is not just mechanical maintenance or adjustment. There are several basic rules and procedures to be followed to keep a combination lock and safe/chest door

working properly. These must be learned through proper training, education, and hands on practice and following proper procedures.

Granted, you might get a slight education by reading books on your own, but I suggest taking an elementary and fundamental safe servicing course including trouble-shooting. I personally took all the Lockmasters courses a good 30 years ago and I never regretted it.

If more of a one-on-one curriculum is desired, then there are several alternative schools which can be found in The National Locksmith Directory. Your local locksmith association might have a course or two during the year that you could attend as well.

There are a number of conventions in different parts of the country where safe classes are always well attended and taught by acclaimed safemen. Attending a 'live' class will also help later when I discuss networking.

Education is probably the most important job a new and upcoming safeperson can have in his bag of safecracking tricks.

In addition to education, a good reference library is very important, but education is more important. You can have all the current books and bulletins in the world, but they will be useless when you come upon your

first hard safe opening. Here is an example of what I mean.

Pretend you want to learn to ride a bicycle and have never tried. You purchase the best mountain bike, the best clothing and auxiliary equipment. You have a tire pump, patch kit, and two water bottles. In addition you subscribe to a mountain bike magazine, and have several books on how to ride a bicycle, with pictures and diagrams, measurements, and hundreds of tips on how to make bicycle riding more enjoyable and easy. Then, you go out and try to ride your mountain bike for the first time, never having done it before. What are the odds that you will immediately start riding the bike correctly and not fall down? No training wheels, pal.

Crashing and falling is part of learning and experience. The next time you may stay up longer and find riding can be fun. Every different riding condition will teach you just a little more. The same is true about safecracking. Without experience, and education, you will crash and fall while working on someone's safe.

A safeman once called me and wanted to know what to do. He had all the books, all the drill rigs, all the tools including borescopes. He outfitted himself with all the best tools, and implements and instruments of the trade. He came upon a

**Continued on page 38**



**Continued from page 36**

TL-30 safe, and had spent three days trying to get it open, with disastrous results. The net result was drilling several holes in the unit with no effect other than massive frustration both on his and the customer's part.

**W**hat should he do? I gave him several avenues to pursue. I told him to call someone who could help him, suggested he get some education before calling himself a safeman, and not to take jobs beyond his experience until he was better able to provide professional services. I was a beginner too about 45 years ago. I had to learn the hard way. Experience is the best teacher, but not the only way to learn.

I touched on this briefly before, and the fancy word "NetWork" simply means friends that you can call on to help when needed (or in fact, just for fun) when opening a safe. In the past, I have had several tool box carriers. These were locksmiths that wanted to know about safecracking. They learned both the up sides and down sides of the craft. It can be very frustrating work at times, but also very rewarding.

As the safes get harder and more diabolical, you are going to need a good network of professional friends, education, and experience. Without it, you will be very limited, at best.

**TOOLS OF THE TRADE**

Now, for the hardware and tool section. This is the most fun part of safecracking. Playing with the toys (tools) that make safe opening so much fun. I will mention each tool type and what I personally use.

There are many good alternatives and tools made by others and I will mention these too. That is why there are Chevy, Ford, Dodge, and other manufacturers of service vehicles. Some swear about what is a good vehicle and what is a bad vehicle. It comes down to personal choice. My favorites are my favorites, and I am not pushing any one product. I write about that which I know and that which I utilize in daily safecracking efforts.

There is no real order here. These are tools I have in my war chest, and they have served me well over the past 35 years of my professional safecracking career. Let's jump in and see what we have.

Prices for tools vary, from expensive, to unaffordable, to reasonable. My discussion is not

about price. If you want to be a professional safecracker, you will have to spend money on tools, education, books, and other essential devices. This is not really a part time type of profession. Be prepared to spend some money. A good tool will easily pay for itself in time saved on the job, and in less frustration with the safe you are working on.

**TORSION BAR**

My first and favorite tool is the dreaded and diabolical Chrysler Torsion Bar (see photograph 1). I cut and ground off one end and shaped it into a wicked point. I have used this in a variety of situations. It is a prybar when moving safes and is also very effective when 'peeling' a burglarized safe.

This bar was originally from a 1958 Chrysler Imperial and was originally about 5 feet long. Years later, with sharpening and configuring the end differently, it is about 4-1/2 feet in length, still as wicked as the first time I used it.



**1. This is the dreaded, diabolical, devilish Chrysler (Imperial) Torsion Bar, at 47 inches in length.**

Even the mighty Mosler has succumbed to a few well placed punctures with this tool and a large sledge hammer. This one tool gives me psychological advantage over any safe or chest. If it is man made, it can be man defeated. Nothing does this like the "Twirling Torsion Bar of Doom."

**BORESCOPIES**

Even before discussing drill rigs and drill motors, my most important tool is the borescope. I have several, from the trusty ESI true view 12 inch borescope (see photograph 2), to the incredible 17 inch Hawkeye gradient lens system (see photograph 3). I have several other instruments, but these are my favorites.



**2. ESI borescope and 'grain-of-wheat' light.**



**3. The Hawkeye 17 inch borescope (focusing) with mirror tube for right angle viewing.**

I have heard safemen tell me that they do not have a borescope, and they have been opening safes for many years. My response to that is get into the modern era. It does not show weakness if you use a borescope, it just shows better judgment and professionalism when opening safes. The uses for a good borescope are many, but I will just mention a few.

**F**irst, you will not have to drill directly at drop in. You can drill and transfer easier, you can view many parts of any combination lock from a variety of positions, and more importantly, the change key hole can be utilized to read the combination to a lock. It makes much more sense to drill a Knight Safe from the side and read the wheels, than it does to try and drill through their hateful hard plate. A tough expensive lesson in wasted hardplate drills and time on the job.

General scopes that can be used in lock-smithing as well as safe cracking include the otoscope (eye,





**4. Useful Otoscope and an Ophthalmoscope. Great for viewing straight on at drop in point.**

ear, throat type) and the Ophthalmoscope which an eye doctor uses (see *photograph 4*). These are used for straight in viewing at the drop in position or at the wheel edge for transferring gate positions.

The Hawkeye incorporates both the side viewing advantage of a

borescope with the addition of a right angles tube, and that of an Otoscope. Straight on viewing is also possible with this fine inexpensive well made scope.

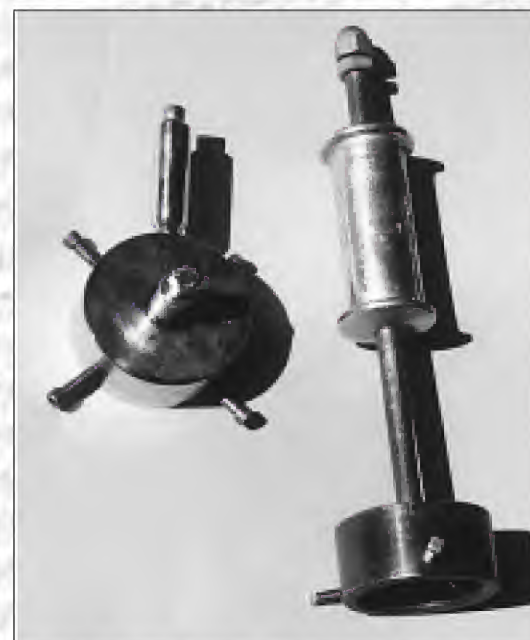
#### DIAL PULLERS

For those under the dial drilling jobs, you will need a tool to remove the dial. There are a number of dial pullers available. Two popular dial pullers are available from Lockmasters (see *photograph 5*) and TimeMasters (see *photograph 6*). One pulls the dial, the other pushes the dial off the end of the spindle. There are advantages and dis-

advantages to both, however, either will get the job done.

#### DRILLS

Next, we will discuss drills. Many call these tools drill motors, but I prefer drills. I use the term drill bits to differentiate between these two items. Different parts



**5. A popular dial puller from Lockmasters.**

of the country, different nomenclature and terminology.

Low speed high torque drills and high speed drills are needed to penetrate exotic hard plates and included materials. I have an old Hornet drill which in second gear will



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6. The TimeMasters dial puller pushes the dial off the end of the spindle.

7. Typical hammer drill and with a 1/2 inch chuck. This unit is a Porter Cable (industrial strength).



spin at 4500 rpm. There are several Bosch drills that also perform well. For the low speed drilling I use a Milwaukee Hole Shooter 1/2 inch workhorse. I also have a Porter Cable 1/2 inch variable speed drill which has worked well penetrating safes, even without drill rigs.

**W**hen deciding on purchasing a drill, think about purchasing a drill that is both a regular drill and also a hammer drill. I anchor a lot of safes to cement floors, and a good hammer drill and a percussion carbide drill bit is important in making a good quick clean hole in cement and concrete. 1/2 inch is probably the best size to purchase. Porter Cable and Milwaukee both make excellent hammer/regular drill motors (see photograph 7).

#### GRINDERS

Another useful tool, and one you will use often is a die grinder (see photograph 8). When you need to grind down those weld repairs or make other quick steel modifications, a die grinder is the answer.

#### DRILL RIGS

Drill rigs? What are drill rigs? These are tools that increase the pressure on the drill bit when trying to



8. A popular tool, a die grinder with carbide burr tip. This unit max speed is about 30,000 rpm (no load).

penetrate a safe. They can be divided into two groups. The fixed rig and the lever rig.

The lever rig is the simplest. It is a long bar or lever that attaches to the back or front of a drill and is attached to the safe door by a chain or strap. This increases drilling pressure, and



9. My favorite lever drill rig, the LEE unit attached to my Hornet 4500 rpm drill.



10. Popular fixed drill rig, the Mini-Rig from StrongArm. It can be attached to safe dial ring screws or anywhere on the safe.

is kind of like having a portable drill press attached to the door. It is easy to set up and use (see photograph 9).

Skill is needed for this rig, and that comes only with experience. I have drilled a hole in a Mosler money chest with one drill bit, whilst others have used the same rig on the same door at a different place, and have used in excess of four using the same exact drill bits.

**T**he advantage to a lever rig is that it can be utilized in many positions and angles, on both old and new safes. I have used a Lee Rig for about 30 years and it has served me well. There are several similar rigs around, from StrongArm and Keedex, just to name a few. Good construction of the rig is more important than price.

A fixed drill rig is exactly that. It must be attached to the door somehow. The StrongArm Mini-Rig is my favorite, but there are several other manufacturers that also make a similar unit (see photograph 10).

The Mini-Rig can be attached to the safe door in several ways. The

most common is to attach the base plate to the door using the dial ring mounting holes and hardened cap (8/32" is the most common size) screws directly to the door. By using other adapters, the Mini-Rig can be accurately attached to the side, top, or even back of the safe for precision point penetration.

I also have a Magnum Drill Rig by Lockmasters which clamps and straps to the safe. Some rigs even use ceramic magnets to hold the drill rig to the face of the door. These rigs are used for precision drilling through hardplate.

#### DRILL BITS

With drills, you also must use good drill bits of high speed steel (HSS), Titanium, Cobalt, and Carbide, or a mixture thereof. I use StrongArm drill bits for all my penetration needs. They have recently come out with a new and improved model of bit that lets me use a single bit (sometimes) for two or more openings. Their new bits are diabolical.

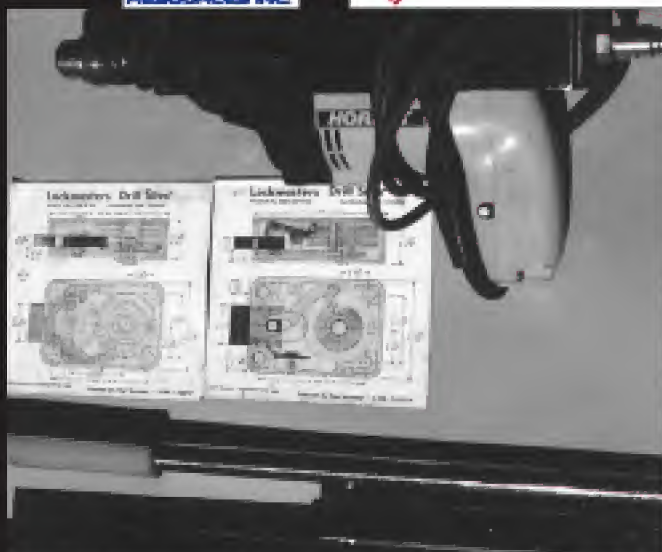
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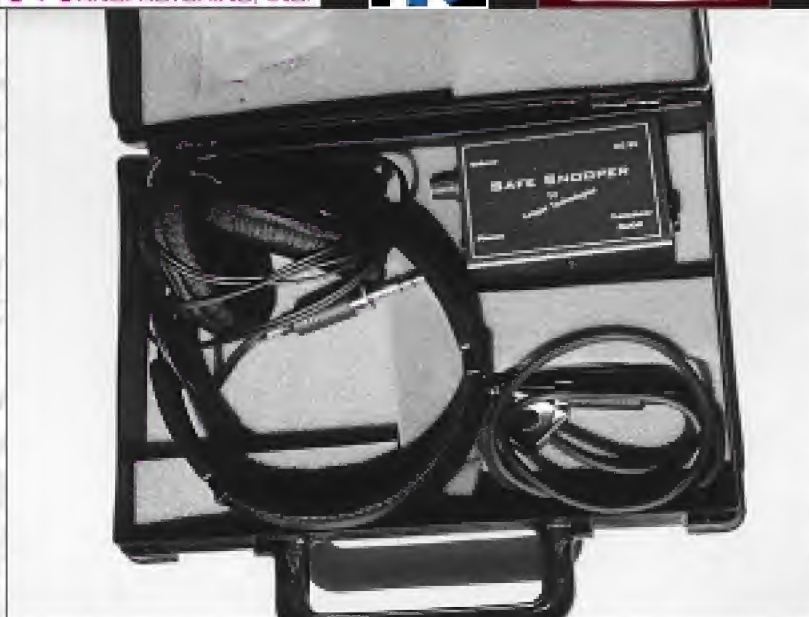
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**11. Drill templates by Lockmasters give you an x-ray view of the lock.**



**13. The "Safe Snooper" listening device.**



**12. Chisels and punches for that "delicate" touch.**

Many other manufacturers make these bits too and are available from Keedex, Lockmasters, TimeMasters, Mark Bates Associates, just to name a few. Good penetration with good price are my guiding criteria. Only experience can guide you when buying hardplate drills. Try them all, and choose your favorites.

#### DRILL TEMPLATES

Another useful tool, for the beginner and the expert are Drill Templates. These let you see as if you had X-ray vision. Some are peel and stick, some are magnetic, and most are reusable with care. Lockmasters makes a good set of these templates (see photograph 11). Carl Cloud at Learning Unlimited makes another excellent set of useful drill templates.

#### CHISELS

Along with many hand tools, the usual screwdrivers, hammers, wrenches, change keys, and change key sets, it is important to have

chisels (cold steel) and drift, straight, and taper punches (see photograph 12). These delicate tools are used to smash recalcitrant parts into proper alignment and take out your frustrations on the safe. Even if you do not use them in disillusionment when the safe is not opening the way it should, it gives you a relief valve, just knowing that you have them. That is the real secret of the Torsion Bar. It makes you think you are invincible.

#### LISTENING DEVICE

Next to last, on this much incomplete list, a good safecracker should (must) have a listening device. This tool can help in manipulation and in diagnosis of internal safe problems (see photograph 13). I just did an article on this called "I am Listening" a few months ago and are available from a TimeMasters, Lockmasters, MBA and the like.

#### CONCLUSION

In conclusion, the most important thing to have in your tool box is the "desire to succeed." A lot of safecracking has to do with the desire and determination of the individual safecracker. Safecracking is work, sometimes a lot of work and an endless chore. Granted, some safes are easy. One does not learn anything by opening these. The hard units are the one's that give you some education.

What tools should you buy? It depends on your level of education, experience and commitment. Here is where a network is important. See what

safes are in your area and what you are being called on to open. If you are working in a government area with lots of TL-30 and better units, buy accordingly. If you are only going to start opening Sentry and Meilink fire safes, your initial investment will be smaller.

If you do not manipulate safes open, then buying manipulation aids is a waste of money. There are no shortcuts here. You must have experience, and education, and training. When you have the knowledge of what you must do to open a safe, then that will determine exactly what tools you will need.

To use a cliché, safecracking is both inspiration, knowledge, and perspiration. The more you know, the more desire you have, the less perspiration you will encounter (hopefully).

This is by no means an exhaustive list of what you must have to be a serious safecracker or safe technician, but let me stress again that education and experiences are the best teachers.

#### OPEN AND PROSPER!

For more information on safe related products contact any of the following suppliers:

ESI - (716) 235-1430  
Keedex - (714) 636-5657  
Learning Unlimited - (619) 270 1500  
Lockmasters - 800-654-0637  
MBA - 888-622-5495  
MDS - (813) 653-1180  
PRO-LOK - (714) 633-0470  
StrongArm - 800-710-8168  
TimeMasters - 888-798-8464

**TNL**





**1. A chance to drill and evaluate an Eclipse gun safe.**



**2. Mounting the small, but mighty, StrongArm drilling rig.**



**by  
Carl Cloud**

is among the leaders in quality built and imaginatively designed safes.

Over the years, I have had only two warranty calls for Eclipse. One was an 'operator error' and the customer only required a little instructional help. The other was a broken handle by a customer who admitted to a 'little' abuse.

When I received a call about opening an Eclipse with a lost combination, I thought, "Well it's about time." At last, a chance to drill and evaluate an Eclipse gun safe. The safe is a rather plain Jane B Rate unit that was anchored to the floor in the corner of a storage room (see photograph 1).



**3. Don doing his peek-a-boo into the drilled hole.**





**4. The installation of the LaGard 3300 series lock.**

**5. The correct method of attaching the relocker retaining plate.**

**6. Another product Eclipse makes is the "Rota-Bolt."**



For the technician with a nice long scope, this safe would be a perfect candidate for a scope shot from either the top or hinge side. However, I had Don Garrett, a local locksmith assisting me. He had offered to help me in exchange for the learning experience so I decided to use my standard penetration and opening methods because you don't learn much watching someone else use a scope.

I had Don drill down the center of the LaGard dial to reduce the flared end of the spindle so the dial could be pulled off. With the dial and dial ring removed, he used my "Drill Point" safe lock drill template to locate the exact spot for the fence in the vertical down mounted lock.

With the drill point marked on the door, we mounted the small, but mighty, StrongArm drilling rig (see photograph 2). This little five-pound rig will fit in your lunch box. Outfitted with the StrongArm drill bit, it can chew a hole into the meanest of hard plates. The hard plate in the Eclipse is formidable. You better have a decent drill rig and a couple of good carbide drill bits.

Photograph 3, shows Don doing his peek-a-boo into the drilled hole. While turning the stubby spindle he watched the wheel gates align under the fence. This is the fun part, seeing the fence lower and disappear as the lock bolt is retracted!

The distance from the door face to the view of the locks wheel pack is very shallow. There is no need for an expensive viewing scope here. We used an Otoscope, but a pen light would have done the job.

In photograph 4, we see the installation of the LaGard 3300 series lock. A look back at the first photograph would offer a good guess of the lock being handed ventricle down. The knowledge of the lock handing is beneficial prior to creating a hole in the safe door. If you understand the procedure of transferring, a hole drilled for the wrong handing will still open the safe lock for you.

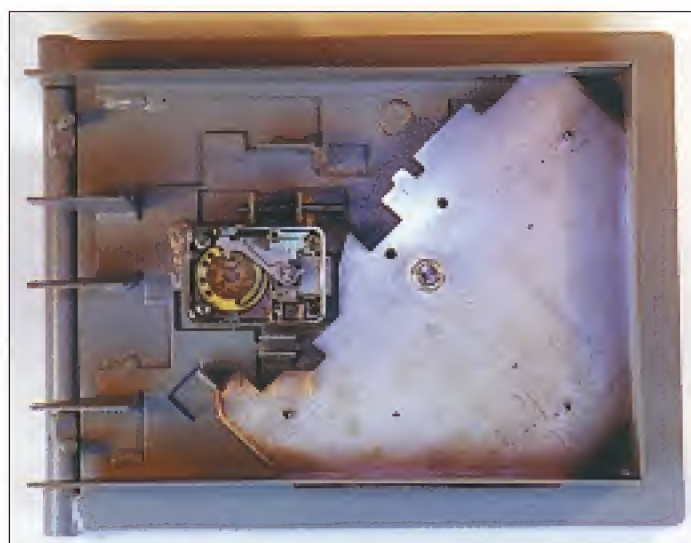
A manufacturing design is seen in the 'carriage bar', the formed plate below the lock case. This stamped out plate provides a socket for the combination lock bolt and a relocker to nest. It also provides two tabs for a heavy duty roll pin to move the locking bolts with the handle shaft. This plate is mirror halves. This means that it could be turned around and installed into a left-hand door.

This safe also has a relocker mounted on the left side of the lock. The plate is notched so a relocker could be installed on the right side or on both sides. If this safe was burglarized and the carriage bar was damaged, you would only have to replace a one piece part.

Photograph 5, shows the correct method of attaching the relocker retaining plate - it is mounted to the lock's back cover. Note the oversize holes around the cover mounting holes.



The thickness of the LaGard cover is reduced around the mounting holes. Instead of a break away line as used in the S&G cover, the thinness of the metal around the head of the mounting screws will break under pressure and release the cover. When this happens, the mounting screws are left in place in the lock case. If the plate was held to the cover just by the mounting screws, it would defeat the break away feature to fire the relocker.



**8. The rotation of the locking plate.**

It is a bit of a pain to replace a damaged cover. You have to drill out the rivets to release the plate and then reinstall the plate onto a new cover. It's another five minutes added to the job. When done correctly, you know in the event of a future attack the relocker will fire and do its job. If the safe is equipped with an electronic lock, the relocker retaining plate would be attached by the cover screws. Drilling mounting holes into the electronics of the locks back cover is NOT recommended!

**A**nother product Eclipse makes is the "Rota-Bolt" (see photograph 6). The design of this door was intended for use on the in-floor style safes, but it can also be used in the standard upright versions.

Safe manufacturers have used everything from a single flat bar to multiple round locking bolts to secure the opening side of their doors. Eclipse evolved their idea into a single piece, three point locking design (see photograph 7). The stamped formed plate is of three-sixteenth high tensile steel and is designed to protrude on three sides of the door when in the locked position. Try punching the bolts back on this safe door!

In photograph 8, you can see the rotation of the locking plate. How about drilling out the handle shaft and punching the plate down? The handle shaft is shouldered to prevent punching and is reduced in diameter



**7. Eclipse evolved their idea into a single piece, three point locking design.**

to create a shear area if the handle is forced. In addition, a hardened Dow pin is installed down the center of the shaft, making drilling the shaft a real project. Even if it were possible, the attempted punching would probably bow the plate and bind the extended 'ears' into their frame guides.

The 'pan' of the door is again a formed stamped part. The pan incorporates tabs that form the brackets for the relocker, the 'stops' for the locking plate, the mounting bracket for the door assist piston and the three 'dead bars' on the hinge side. The two holes just to the left of the handle shaft are mounting holes for a counterbalance plate. This prevents the locking plate from rotating to a locked position when the door is installed in an upright position.

Eclipse Safe incorporates both knowledge and originality into their safe designs. This is something that we don't see from many safe manufacturers.

To contact Eclipse Safe, write to 1923 Commercial St., Escondido, CA or call (760) 746-1016. **TRL**

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# The New Magnum 457 Drill Rig



**1.** The Lockmasters Magnum 457 fixed drill rig.

*A look at the new  
Magnum 457 and  
companion drill rig,  
"The Bullet."*

by Allen Halverson



**2.** The barrel assembly of the new 457 will catch your eye as it has no exposed threads.

**3.** A quick release coupling, attached to the frame allows complete removal.



## Short History and Comparison

Fixed drill rigs made for safes have been on the market for over twenty years. They have ranged from the Penetrator, which was one of the first, to the Magnum 457. Before the Penetrator, the primary safe drill rigs were the O'Brian and the Lee, both of which were Lever Rigs. The only means of controlling the depth of drilling and keeping the drill bit straight and steady was the operator and or his helper.

In the years following we saw the introduction of a number of safe drilling rig designs such as the Black Bart (crude but effective lever rig), Collins Rig (lever-unique push and pull feature), Strong Arm (lever-similar to the Lee but with improvements), Equalizer (lever similar to the Lee but with improvements), Framon (fixed-cumbersome for one person to set up), Willie Rig (fixed-designed for cannonball safes), Sure-Shot II (fixed attached to the dial ring and included template drilling), Magnum 357 (fixed-attached with magnets or pipe clamps and straps), Magnum 457 (fixed with a smaller frame than the Magnum 357 and capable of angle drilling), Strong Arm Mini-Rig (a fixed cross between the Penetrator, Sure-Shot I, and Cannon with some improvements), SafeCracker (fixed, crude, similar to the Sure-Shot I and II), Hardwick (fixed-close look-a-like of the Magnum 457 with some improvements), Cannon (fixed-similar to the Magnum 457 and attaches with magnets) and finally, a variety of magnetic drill presses. That's quite a few, isn't it?



## Inherent Problems

All of the fixed safe drill rigs, with the exception of the Sure-Shot II, had the same method of advancing the drill bit in their design. A threaded rod or barrel assembly passed through a plate attached to the frame. The main difference in these threaded rods or barrel assemblies was the diameter and threads per inch. The Magnum 357 and Magnum 457 used 16 threads per inch. The theory here was that one complete turn of the rod or barrel would advance the drill bit one sixteenth of an inch.

One common problem with the fixed safe drill rigs was that metal shavings from drilling would get into the threads causing the rod or barrel assembly to freeze up. You had to have a brush with you to keep the threads clean.

Another problem common with most fixed safe drill rigs was the inability to view into the drilled hole to identify the barrier material or check your progress. In most instances, a part or parts of the rig had to be disassembled.

The Magnum 457 sold by Lockmasters has long been a popular fixed safe drill rig. However, the Magnum 457 wasn't without some problems. Like other fixed rigs, metal shavings would lodge into the threads of the barrel assembly and cause the rig to freeze up. Part of the rig had to be disassembled to view and the entire package which included pipes and magnets that weighed 48 pounds. It was placed in a handsome carrying case that would stretch the arm of anyone carrying it. Side drilling was out of the question and setting up the Magnum 457 on a GSA security container with the control drawer at the top was an engineering feat.

Lockmasters realized that something had to be done to eliminate these problems with the Magnum 457 or retire it and come up with still another drill rig. Fortunately for all of us that own a Magnum 357 or Magnum 457 they decided on the former.

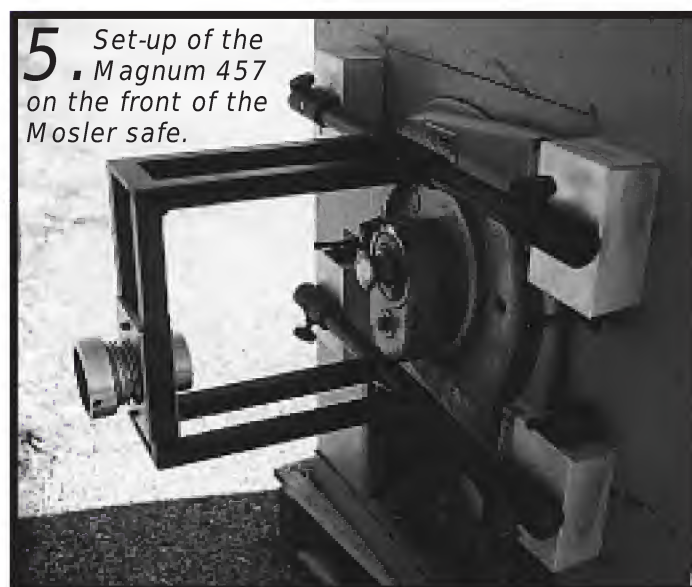
## The New & Improved Magnum 457

At first it is the same old Magnum 457 (see photograph 1). The frame looks the same. It still has the pipes and magnets and it still mounts the same way. The frame is one piece now which means you have three less parts to put together. There are now only two pipes instead of four. These are unthreaded and used with the magnets. The four old style pipes, were threaded so that you could make two extended pipe clamps that would protrude beyond the sides of the safe. This allowed you to attach nylon safety straps around the safe to secure the drill rig. The older pipe clamps and nylon safety straps could be used instead of magnets and are still available and can be purchased separately.

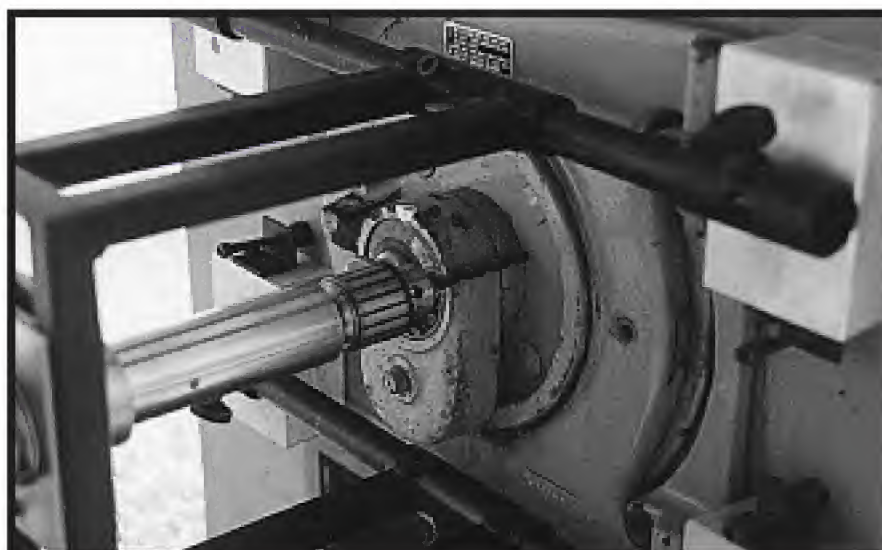
The barrel assembly (see photograph 2) will catch your eye as it has no exposed threads. This means you won't have to worry about metal shavings. The bearings, top and bottom, are improved and guide the quill assembly accurately and without effort. The threading of the quill is 12 threads per inch which allows faster progress with less work.



4. An old Mosler  
Lug Door.



5. Set-up of the  
Magnum 457  
on the front of the  
Mosler safe.



6. Starting with a four inch high speed steel drill bit positioned next to the key-locking dial ring, the drilling began.



**Continued from page 54**

The most improved new feature is how the barrel assembly is attached to the frame. A quick release coupling, attached to the frame allows complete removal of the barrel assembly (see *photograph 3*). Indents on the barrel assembly align with spring loaded ball bearings in the quick release coupling in three different spacings to hold the assembly firm. Whenever you need to view the drilled hole or change drill bits, just release the coupling and slide the barrel assembly completely out of the rig. It is fast and it is easy.

More importantly, this new barrel assembly with the quick release coupling will retrofit with the older Magnum 357 and Magnum 457 and can be bought separately. The "Hex Drive Socket" has been redesigned and is much larger, stronger and deeper than the old style.

**The Pleasure of Drilling**

You have to believe that the equipment you are using is going to do the job. That alone should give you the confidence to get the job done. The Magnum 457 does just that. Now it is just a matter of planning.

The safe in *photograph 4*, is an old Mosler lug door. Notice the unusual key locking dial ring. I checked Dave McOmie's safe opening books and could not find any information on this. I did however find plenty of Mosler lug doors, but which one?

Sometimes you just have to gather up your experience and take an educated guess, and that is exactly what I did. I didn't want to drill into the key-locking dial ring, I wanted to get as close as possible to it and at a point that I would be able to view the wheel pack once the door had been penetrated. The best information I had at hand was that the distance from the face of the safe to the back of the lock was 1-3/4 inches!

I set up the Magnum 457 on the front of the safe (see *photograph 5*). The pipes were just long enough to fit into the magnet tubes. Longer pipes are available from Lockmasters or you can make you own. Keep in mind that their pipes are a special thick wall tubing that will not rust or corrode.

Starting with a four inch high speed steel drill bit positioned next to the key-locking dial ring I began drilling (see *photograph 6*).

Had this been the old barrel assembly I would have had to thread the barrel over four inches, 1/16 inch at a time to position the drill bit. That is sixty four revolutions. With this new quick release coupling it was just a matter of releasing the coupling and pushing the barrel assembly in.

After drilling into the safe approximately 2 inches, it was time to check my progress and change over to a 6 inch drill bit. No turning of the barrel assembly required, just release the coupling and pull the barrel assembly completely out.

I checked the drilled hole, no lock in sight, just copper. Changed drill bits and again

released the coupling and placed the barrel assembly into position. More drilling was required and after 3 inches of penetration I again removed the barrel assembly to check my progress. Still no lock in sight, but according to the information I had, the back of the lock could be 3-1/4 inches from the face of the door.

I replaced the barrel assembly and continued drilling. Moments later I felt the drill bit give which meant I entered a void. Releasing the quick release coupling I pulled the barrel assembly clear of the frame and took a look into the drilled hole. There it was, the lock.

Using a scope, I dialed open the lock.

Having the new Magnum 457 with the quick release coupling and new barrel and quill assembly saved me about 15 to 20 minutes, the difference between unthreading the barrel assembly and just releasing the coupling to check my progress and change drill bits.

All things considered, I give this new Magnum 457 four stars. The rig itself was very easy to set up and the new barrel and quill assembly with the quick release coupling made the job easier and a pleasure to do. The only thing that could have made this job better was more information about the safe itself. By the way, the information on this safe was in McOmie's books without this odd key-locking dial ring. I'll just have to look harder next time!

**The Companion "Bullet"**

Borrowing from the Sure-Shot I and II, Lockmasters developed a second companion drill rig, the "Bullet" with several templates available (see *photograph 7*). The template that comes with the "Bullet" provides drill points for the fence, lever screw, relocker and scope for S&G, Ilco and LaGard locks. Other templates are available with the spindle hole and mounting holes pre-drilled. Use this plate to design a drilling template for additional lock types.

These templates can be attached to the safe via the dial ring mounting pattern or the handle attachment pattern on the Star. The

**7.** Lockmasters developed a second companion drill rig called the "Bullet."



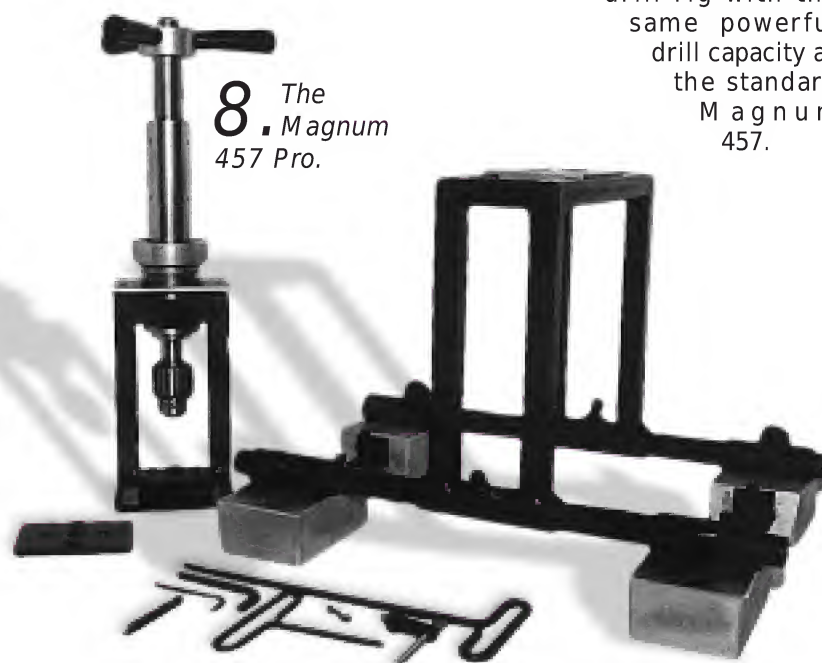


"Bullet" frame is then mounted to the template with two screws over the drill point of choice.

For side drilling or drilling outside of the dial ring, a guide plate complete with drill bushings is provided to accurately drill the two

mounting pattern holes anywhere on the safe. The "Bullet" accepts both the barrel assembly from your old Magnum 357 or Magnum 457 or the new Magnum 457, and again, can be bought separately. Don't be fooled by the "Bullets" small frame.

This is a heavy duty drill rig with the same powerful drill capacity as the standard Magnum 457.



8 The  
Magnum  
457 Pro.

### Choices

The Magnum 457 Pro (see photograph 8) is the best of both worlds. It comes in two cases for convenience and weight control. Case one is newer, lighter, and contains the Magnum 457 complete and includes the Bullet frame. Case two contains the magnets, pipes and a tool tray for your bits, punches and related tools.

Anyway you slice it, Lockmasters is giving the technician the product they want, how they want it and at prices that won't break the bank. While the new improved Magnum 457 is an upgrade that is a welcome change, the addition of the companion drill rig, the "Bullet" has made the package complete. Giving the technician the choice of drill rig and drilling methods is the icing on the cake.

For more information on the Magnum 457 or Bullet drill rigs call Lockmasters at: 800-654-0637.

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# Continuous Hinge

by  
Jake  
Jakubowski



**W**hat does a new back door on a pizza delivery store, a wind damaged door on another restaurant and an out-of-whack, poor closing, steel door in the stairwell of a hospital all have in common? All were either hung, rehung or repaired using Select Products' SL-57-HD, 83" Clear, Full Surface Hinge for narrow frames.

Why would any sane locksmith take on such a job? Because these hinges are fairly easy to install, the manufacturer packs all of the installation hardware (for standard installs) with the hinge, gives you a clear, nearly fool-proof, set of instructions and once in place, this hinge is there for virtually a lifetime! Add all of that to the fact that there is plenty of this work available to the locksmith that wants to take it and you have a situation that will allow you to turn some serious shekels when lock installations and repairs, are on the slow side.

How profitable can this kind of repair be? Very, take my word for it!

And, to top it off, you're already on the job-site! The same customers for whom you are doing safe combination changes, rekeys and deadbolt installations for, are the same customers that need hinge replacements, door replacements and door repair. So why not put the extra coinage this type of work can generate, in your pocket? All you have to do is let the customer know that you can "handle it."

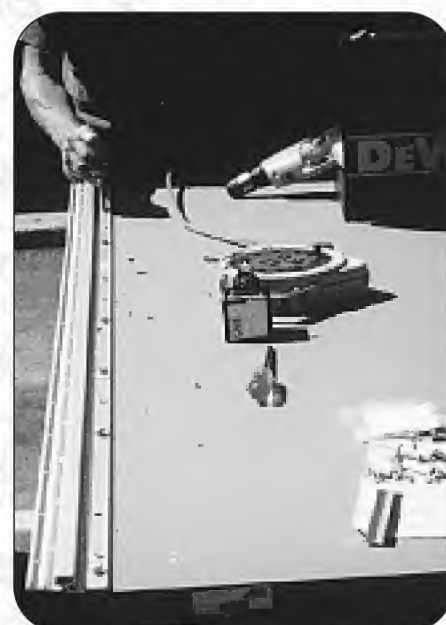
The first job, a pizza delivery store, called for replacement of the entire door. Select Product's SL57HD was chosen since I felt it would eliminate hinge problems on this high traffic door. Secondly, someone had previously welded the hinges to the frame and door trying to "fix" the problem, which precluded using "standard" hinges. The remains of the old hinges had to be chiseled off the frame, and at the top hinge area we had to fill the hole where the backing plate for the hinge was completely missing (see photograph 1).



**2. Through bolting adds substantial strength to the installation.**



**1. At the top hinge area we had to fill the hole where the backing plate for the hinge was completely missing.**



**3. Attaching the SL57HD to the new door blank.**





**T**he customer did not want to pay for a frame replacement, therefore I through bolted the hinge to the frame using sex bolts (on the inside of the jamb) and 4-1/2" long carriage bolts in four different locations along the length of the hinge. The through bolting adds substantial strength to the installation (see photograph 2). Although through bolting is not specifically mentioned in

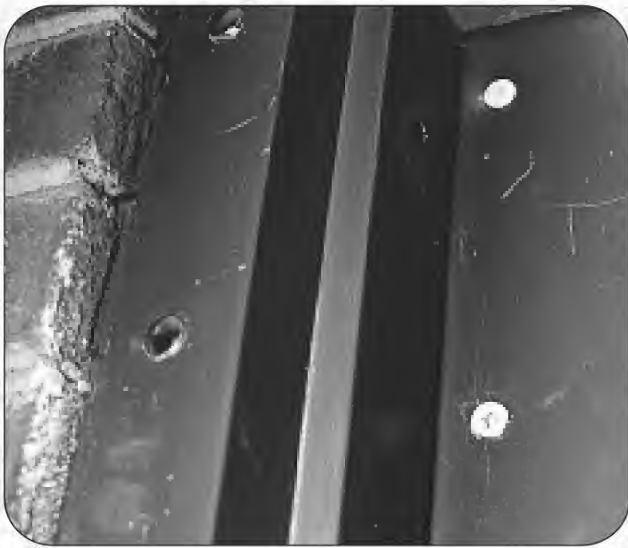
Select's instructions, it is something that I prefer to do on extremely high traffic doors that I am rehanging. And, yes, I do through bolt even on concrete filled frames!

Photograph 3, shows Jerry (a friend I recruit to help me with this kind of work), attaching the SL57HD to the new door blank. Although not clearly shown here, the hinge is being

attached with sex bolts. For security one bolt faces out and one in (see photograph 4). That way, a thief cannot pry off the cover and remove the screws to pry the door open from the hinge side.

Photograph 5, shows the completed hinge and door installation. Note the security covers on the hinge.

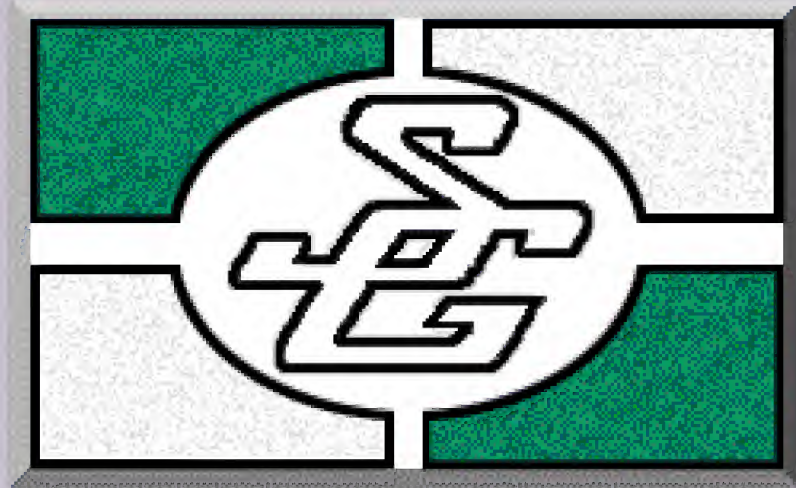
*Continued on page 64*



**4. The hinge is being attached with sex bolts. For security one bolt faces out and one in.**



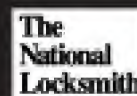
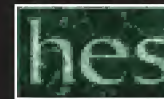
**5. The completed hinge and door installation.**



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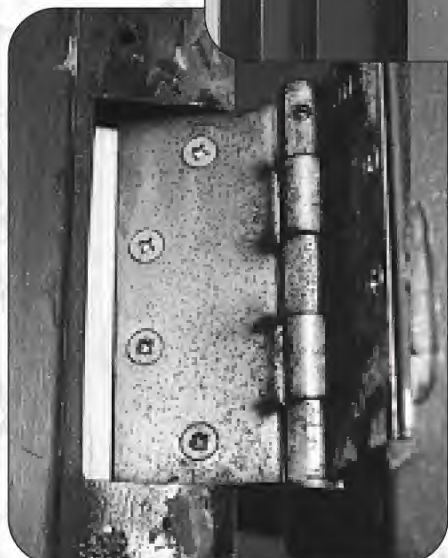
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Continued from page 61

**6. The destruction the wind caused to the hinges.**



**7. The new Select hinge positioned on the door.**



**8. The door is placed in the frame and secured with wedges and two TEC screws.**

On the second pizza restaurant, mother nature had come huffing and puffing along and nearly blew the door off its hinges!

Photograph 6, shows the destruction the wind caused to the hinges.

Photograph 7, shows the new Select hinge positioned on the door. It is held in place with a couple of TEC (self drilling) screws. This way, we can keep the hinge in perfect alignment while drilling the holes for the mounting bolts (3/8") through door.

If you will look closely you can see a MAG Engineering Uniforce (20PB). I placed one of these on both the top and bottom of the door because the door had been whacked so hard by Mother nature that the door's skin had popped loose from the top and bottom rails on the hinge side. With a Uniforce in those locations and the hinge securely bolted to the door, the damage to the door's skin is effectively repaired.

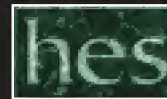
In photograph 8, the door is placed in the frame and secured with wedges and two TEC screws (to maintain clearances and stabilize the door). The hole locations for the sex bolts are marked on the frame using the hinge as a template. The hole you see here is through drilled to accept a 1/4 - 20 Phillips head bolt, and drilled 3/8" on the inside for the sex bolt.

**T**he other advantage to this type of work is you often have the perfect opportunity to sell the customer needed additional hardware such as closers, door stops, door scopes and panic hardware. Stop and think about it. You're there, you're doing the work and your customer needs the products! It's a win/win situation if ever there was one!

The final door is a primary employee entrance door to a medical facility that I do work for (see photograph 9). The door was simply worn out. In addition to sagging, I could grasp the door with one hand near the top and one hand a little below the latch area and actually cause the door to flex (vertically) a couple of inches! The welds had broken loose on the stiles and rails and the door had a tremendous amount of flexibility. Of course, that means it would not close properly, open easily and the wind could literally "suck" it

**Continued on page 66**





Continued from page 64

**9. The final door is a primary employee entrance door to a medical facility.**



open. To correct the problem, I used a new door the hospital already had and Select's SL-57-HD.

Photograph 10, shows my son Kelley drilling the 3/8" holes to attach the hinge to the door.

Photograph 11, shows the hinge and door attached to the frame. Note that I also use TEC screws to hold the door in position while drilling and placing sex bolts or screws. You can see the two through bolts in the first two hole positions from the top of the hinge. As before, I did this because this door is heavily used and it is usually the top, hinge side area of the door that takes the most stress.

Photograph 12, is the completed installation with the security cover in place. This door also received a new closer, a new Sargent 10-Line leverset and a door sweep on the bottom of the door. Figure the ticket out on that one!

**H**ow long did these jobs take? The first one took Jerry and me a little over two and a half hours. That's because we had to chisel the old hinges off the frame and we had to contend with a lot of active traffic in and out of the door while we were working on it. The other restaurant job took about the same length of time because we had other repairs that needed to be made to the door before we could rehang it.

The final door took Jerry, Kelley and I about two hours to complete. Actually, Jerry and Kelley did most of

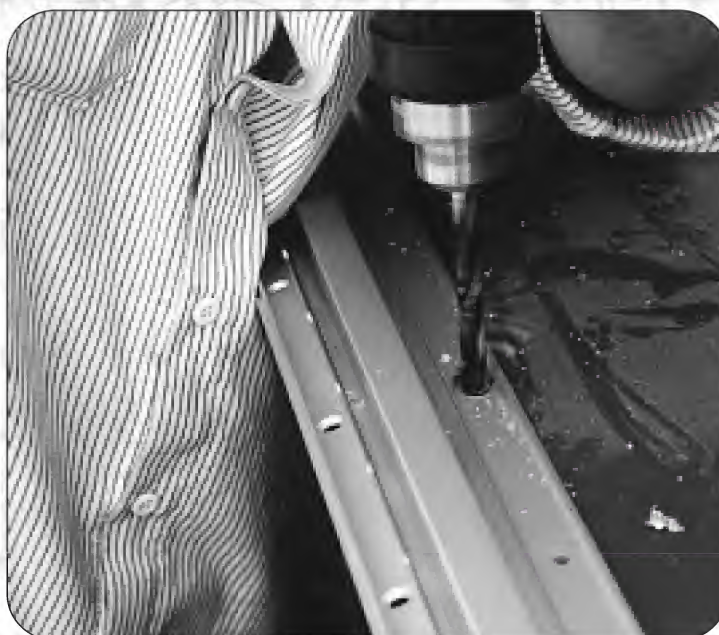
**11. The hinge and door attached to the frame.**



the physical stuff while I took photographs and supervised.

The profit margin for repairs of this nature makes doing them well worth your while. Your shekel intake will increase significantly, especially if you compare it to other aspects of your business. But the really nice part is that there is plenty of this type of work available to the locksmith that wants to pursue it. Just look at the hinges and doors on the next job you go to rekey.

Select Products has a wide range of hinge products that you can utilize to



**10. My son Kelley drilling the 3/8" holes to attach the hinge to the door.**



**12. The completed installation with the security cover in place.**

fill your customer's specific needs. The hinges come in a variety of lengths and finishes. Call Select Products (1-800-423-1174) for the name of a Select Products distributor near you. Tell them: "Jake told me to call." Then go out and shake the Shekel Tree. **TNL**



# EXIT DEVICES

*Delight or Dilemma?*

by Frederick F. Fischbach



1. Exit locks are usually single-point locks or latches actuated by a paddle or lever with 15 lbs. maximum force to unlatch such as the Precision Hardware.

Some confusion will always exist over where and when exit devices, as opposed to bored preassembled, interconnected, and mortise locks and latches, are required in a means of egress. The confusion is generally felt by persons whose job boundaries overlap many jurisdictions, allowing several building codes to come into play. A locksmith operating entirely within one jurisdiction will quickly home in on the local rules.

#### Codes & Standards That Apply

All local authorities having jurisdiction (AHJs) lean heavily on one of the three model building codes: The ICBO's Uniform Building Code (UBC) in the West, Minn., and Texas mostly, the SBCCI's Standard Building Code (SBC) in the South, and the BOCA National Building Code (NBC) elsewhere. The three organizations writing and publishing these codes have marvelously banded together to produce a new council

(the International Code Council) which will publish a new International Building Code (IBC) as well as a complete set of other codes. It will supplant the other three model building codes in the year 2000. The present three model codes will no longer be published.

Presumably the powers that be have selected the best provisions of the three present codes to produce the new one. A "Working Draft" was published (after several years of

coordination) early in 1997 and a public hearing was held in August to entertain proposals for modifications. A "First Draft" was published in November

incorporating the changes approved in the August hearings. Further proposals will be heard in late March (1998) in Washington, D.C. for modification of the "First Draft." A public hearing on changes to the "Final Draft" will be held January 1999 and with approved changes it will become the International Building Code 2000 (IBC).

When we narrow our focus to builders' hardware and further to only exit devices, some other pertinent reference players are recognized: The

*Major changes  
are imminent.*



National Fire Protection Assn. (NFPA) publishes standards NFPA 101 Code for Safety to Life from Fire in Buildings and Structures (Life Safety Code) and NFPA 80 Standard for Fire Doors and Fire Windows; Underwriters Laboratories Inc. (UL) publishes standard UL 305 Panic Hardware; and Builders Hardware Manufacturers Assn. (BHMA) publishes standard ANSI/BHMA A156.3 Exit Devices.

#### **Devices Completely Defined**

By definition given in these publications we see three types of exit devices.

**Exit locks:** (see illustration 1) Usually single-point locks or latches actuated by a paddle or lever with 15 lbs. maximum force to unlatch but not meeting the definition of Panic Hardware given below. These may be installed under all codes cited in any means of egress where Panic Hardware or Fire Exit Hardware is not required or where local authority having jurisdiction has approved such applications.

**Panic Hardware:** (see illustration 2) Defined as crossbar or pushpad actuated releasing device that meets the following criteria:

**2. Panic Hardware is defined as crossbar or pushpad actuated releasing device such as Door Controls International 1200 Rim Exit Device.**

1. Whose actuating member is one-half the width of the door or longer, (2) Releases with 15 lbs. max. force at any point on the actuating member, and is, (3) listed and, (4) labeled by a nationally-recognized inspection agency with production follow up inspection.

This definition suffices for NBC, SBC, NFPA 101, and (draft) IBC, but not for the others. UBC additionally requires, (5) a 50 lbs. max. release force anywhere on the



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actuating member while a 250 lbs. force is applied to the door, loading the latch against the strike, and also that, (6) release of the latch bolt does not depend on a spring.

UL 305 has all of the above requirements except for the actuating member length (one-half width of door minimum). This allowed Exit Locks to be classified to UL 305 as Panic Hardware while unacceptable as such under the five codes cited.

A revised UL 305 is now undergoing canvass for ANSI status in which mention of actuating bar length has been added, cautioning that the local code should be consulted for length requirement before installation. ANSI/BHMA A156.3 has all of the six requirements above plus more than sixteen severe tests for strength, endurance, and resistance to environmental damage. These tests are the basis for a classification of Panic Hardware into Grades 1 or 2.

Fire Exit Hardware: (see illustration 3) is defined under all above codes and standards as an exit device meeting the following four criteria.

1. Qualifies for labeling as Panic Hardware.

2. Fire tested and fire-rated by an approved independent testing agency with production follow-up inspections.

3. Has no dogging or device to maintain unlatched status; or, having such, having a system to release the dog and latch the door in response to a fire alarm.

4. Has a proper label affixed with: "Fire Exit Hardware" and the hourly rating.

Therefore all Fire Exit Hardware are Panic Hardware but not vice versa.

A subset of both panic hardware and fire exit hardware is the delayed egress panic or fire exit hardware. These devices are permitted only under highly restrictive conditions and basically delay opening of the door for 15 to 30 seconds while an alarm sounds, meanwhile instantly opening in the event of a fire alarm. There are ten areas of restriction which vary from code to code, but generally only in a matter of degree. Most interesting to this author, however, is the fact that an absolute contradiction in hardware requirements exists between the codes.

The NBC requires that after a delayed egress the door relock

automatically after a 30 second delay, while the other codes require manual relocking. This means the manufacturers must offer two models of each device — The one to be used will depend upon the code observed.

### **Mandatory Locations**

Finally, we will want to examine where exit devices are required. An exit lock of some type is required on every means of egress door. There are several exceptions such as for one and two family dwellings, jails, etc.

Panic Hardware on all means of egress doors is required now by the NBC and SBC on all assembly and education occupancies with occupant load of 100 and over without exception, the UBC on all assembly and education occupancy rooms with occupant load of 50 or more and all corridors, all hazardous occupancies (except garages and hangars) regardless of load, and institutional occupancies with occupant load of 50 or more, except hospital patient sleeping rooms, jails, and other detention facilities.

As you can see there are notable differences in the requirements. And AHJs may impose more stringent requirements than any in the model code they have partially or totally adopted.

### **Fire Exit Hardware — When Are These Required?**

Very simple. Fire Exit Hardware is required on any fire-rated door which otherwise requires panic hardware, and the fire-rating (hours) must be as great as that of the door. This applies under all codes cited.

Having listed all exit device requirements in the U.S. how about devices desired instead of required? We find a tremendous number of mercantile and mail occupancies where the managers desire an alarm or delayed egress. The panic or fire-exit hardware is an excellent choice for these sites, offering a wide range of options for security and access control.

### **Major Changes?**

The author is predicting, because of various factors, that the new IBC will contain the provisions of the "First Draft" namely Panic Hardware is required only on all Assembly and Education occupancies with



**3. Fire Exit Hardware is defined under all codes and standards as panic hardware plus more, such as Door Controls International 1210F Alarmed Rim Exit Device.**





occupancy load of 100 or more (without exceptions).

Note how this is identical to the NBC and SBC present requirements but varies widely from present UBC requirements for panic hardware i.e. in all Hazard occupancies, most Institutional occupancies, and for all assembly and education occupancies with 50 (vice 100) or more occupants. In the U.S. West far fewer panic hardware devices will be needed!

It is predicted that the change to UL 305 Panic Hardware directing attention to the length of the actuating member versus the code requirement will be adopted along with the rest of the document as ANSI/UL 305-1998. This will bring much needed scrutiny in this area of hardware, where devices labeled "Panic Hardware" are not actually "Panic Hardware" as defined by any of the five codes cited (including the new IBC) unless the actuator is one-half door width or longer. Locksmiths' attention will play a key role in proper selection.

It is further predicted that ANSI/BHMA A156.3 Exit Devices, now in revision, will contain drastically increased strength and durability requirements including a 500 lbs. security test (equal to a mortise lock) impact tests of 70 ft-lbs. or higher, and one-half million cycles to attain a newly defined Grade 1. Present Grade 1 requirements will become Grade 2 and present Grade 2 will become new Grade 3.

A certification program for exit devices is in effect, sponsored by BHMA and with UL administering the program. Devices certified by UL to meet ANSI/BHMA A156.3 are listed by Grade in an annual directory published by BHMA. A locksmith may choose from this directory to ensure that an exit device is of the highest quality.

#### **Summary**

"One code for all" will take effect in and after 2000 A.D.

Fewer panic hardware will probably be required as a result.

A predicted ANSI/BHMA grading will provide a new class of exit devices with the same security and endurance of mortise locks.

For more information on exit devices contact Barbara Maynard at Door Controls International, 800-742-3634, or Scott McIntire at Precision Hardware, (734) 326-7500. **TRIL**

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# TECHNITIPS

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HPC's 1200PCH  
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Silca Bravo Duplicator



**2nd Prize**  
S&G 6120  
Electronic Safe Lock



**3rd Prize**  
Curtis 2100 Duplicator



**4th Prize**  
\$500 in All Lock Products



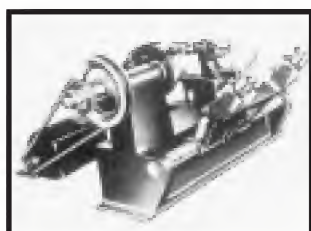
**5th Prize**  
\$500 in ASP  
Auto Locks



**6th Prize**  
SDC Magnetic Lock,  
Keypad and Exit Switch



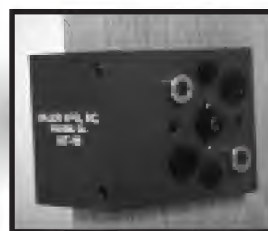
**7th Prize**  
Arrow Exit Device  
and Mounting Kit



**8th Prize**  
Foley-Belsaw 200  
Key Machine



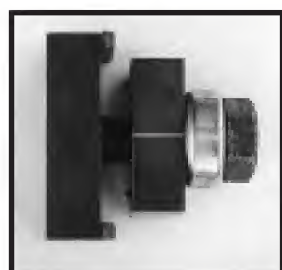
**9th Prize**  
Securtron DK-26  
Touchpad and Cpu  
Board for Magnetic Lock



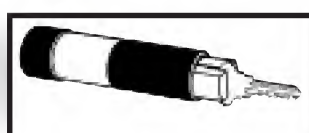
**10th Prize**  
Major  
Manufacturing's  
HIT-111 Drill Guide



**11th Prize**  
Dewalt Cordless Drill



**12th Prize**  
Sieveking Products  
Squeeze Play



**13th Prize**  
Framon Impressioning  
Handle



**14th Prize**  
Book — 15 Minute Safe  
Opening Technique by  
Jake Jakubowski



**15th Prize**  
Slide Lock's  
Master "Z" Tool Set



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- Strattec Racing Jacket
- HPC Pistol Pick™
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- A-1 Security Products
- Silca Key Blanks (100 Blanks)
- Pro Lock Pk 15  
Professional Lock Pick Set
- Tech Train Training Video
- Sieveking Products  
Gm E-Z Wheel Puller
- Major Manufacturing Products
- Slide Lock's "Z" Tool Opening Set
- The Sieveking Auto Key Guide
- Jet Key Blanks (100 Blanks)
- High Tech Tools
- LaGard Combo Guard



### 16th Prize

Falle Pick Set From Mark  
Bates Associates



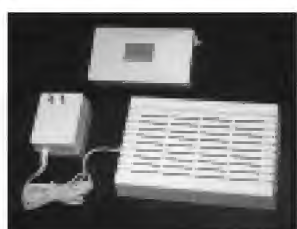
### 17th Prize

Baxter J V-1 and  
J V-5 Code Books



### 18th Prize

ABUS Padlock's Marine  
Padlock Display



### 19th Prize

Rodan's AV 100 Heavy  
Duty Door Annunciator



### 20th Prize

ESP Products Sampler



### 21st Prize

Detex ECL-8010W  
Wetlock®



### 22nd Prize

LaGard "Smart  
Guard"®



### 23rd Prize

M.A.G. Engineering  
Sampler



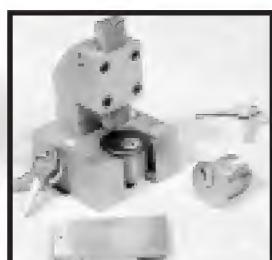
### 24th Prize

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Products



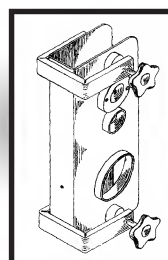
### 25th Prize

High Tech Tools  
2500 Pro Set



### 26th Prize

Accu-Mark™ Key  
Stamping Machine



### 27th Prize

A-1 J -50  
Installation J ig



### 28th Prize

Mas  
Hamilton's  
Auditcon  
2100 &  
Certification  
Class

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Jake Jakubowski, Technitips Editor,  
**The National Locksmith**,  
1533 Burgundy Parkway, Streamwood,  
IL 60107-1861 or send your tips via  
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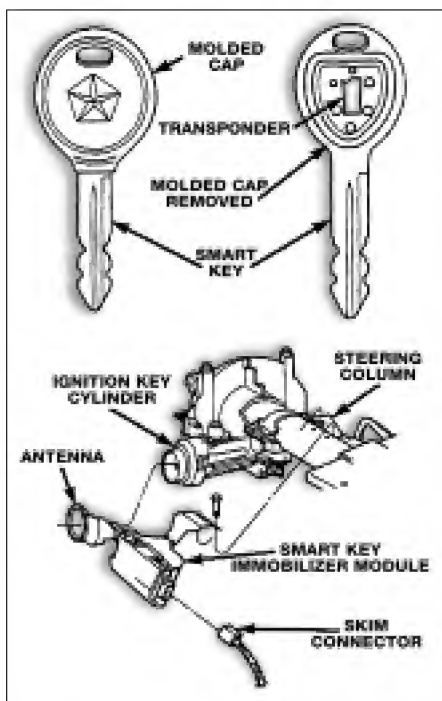




**ALL LOCK KWIKIT  
WINNER:  
Chrysler  
Programming  
Procedure**

Chrysler has introduced a transponder key system (Vehicle Theft Security System) as a factory installed option on selected 1998 models. Chrysler's VTSS is a passive system designed to protect the doors and trunk as well as the ignition from unauthorized operation.

The transponder is under the molded rubber head of the ignition key and the antenna is in the ring around the ignition switch (see illustration 1). Non-coded key blanks are currently available only through your local Chrysler dealer. Although these blank keys can be cut to a mechanically correct code, the engine will not start unless the key's transponder is also programmed to the vehicle. That coding is accomplished as follows:



**Illustration 1.**

First, obtain the additional transponder blanks that need to be programmed to the vehicle and cut the blank or blanks to the proper mechanical key code. This will allow the ignition to operate, but will not start the vehicle.

Next insert a valid, properly coded transponder key (you'll need two of them to program the extra keys) into the ignition switch and turn the ignition to the "ON" position.

## A Few Words From Jake...

I am probably going to get reprimanded by the editor (Greg Mango) for saying this again (because he's tired of hearing me say it), but if the folks that are taking the time to send me tips, especially by E-mail, don't include a physical address, I can't print the tip! No physical address - no printed tip! Period.

Now that that's been said for the umpteenth time, let's get on to the other stuff.

It's May already and within the next six weeks, we're going to be on the down-hill side of 1998. That means if you want to win a great monthly prize or a fantastic year-end prize, this year, you had better get to writing. I want every reader to know that I don't care whether you've been a locksmith six weeks or sixty years, if you send me a worthwhile tip (along with a physical address), I'll use it. It might be something that some older locksmiths consider basic, however, every year, there are hundreds of new locksmiths that enter the business and virtually every idea they see is new, and unique! There are also a number of established locksmiths who may not have looked for a solution to a problem in the same way as a new tipster did.

If you have an idea and want to share it send it in. If it's usable, I'll print it. If I print it, you'll win some goodies. Don't worry about how it's written, don't worry about how the illustration is drawn and above all don't worry that someone might have sent in a similar tip before or that everybody probably already knows about it! Just send it in and let me decide.

Y'all heah me now?



**by Jake  
Jakubowski**

After three to four seconds with the ignition in the "ON" position - but no more than fifteen seconds later - turn the ignition switch back to the "OFF" position. Remove the first properly coded operating key and replace it with the second properly coded key and turn the ignition back to the "ON" position.

Approximately ten seconds later, the VTSS indicator will start to flash and a single audible tone will sound to indicate that the system has entered the "Customer Learn" programming mode.

Within fifty seconds after the LED has indicated that the system is in the "Customer Learn" mode, turn the ignition switch to the "OFF" position and replace the properly coded Smart Key with the blank transponder Smart Key. Next turn the ignition switch back to the "ON" position (remember, this key has already been mechanically cut to code).

About ten seconds after the completion of the foregoing step, you will hear a single audible chime and the VTSS LED indicator will cease flashing and stay on for about three seconds. That indicates that the blank Smart Key transponder has been successfully programmed. At this point, the system

will immediately return to normal system operation as it exits from the Customer Learn programming mode.

If additional transponder coded keys are needed, repeat the foregoing process for each additional Smart Key to be programmed.

If any of the above steps are not completed in the proper sequence, or within the allotted time, the system will automatically exit the Customer Learn mode. It will also automatically exit the programming mode if it sees a previously coded blank when it should see a non-coded blank. Other system cut-outs will be instigated if eight Smart Keys have already been programmed or the ignition switch is turned to the "OFF" position for more than about fifty seconds during the programming sequence.

Bill Frase  
Delaware

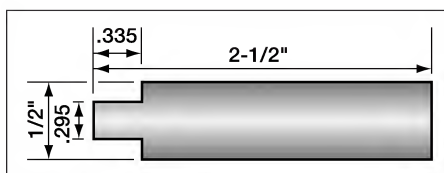


**AERO LOCK TRY-OUT  
KEY SET WINNER:  
GM Plug Removal**

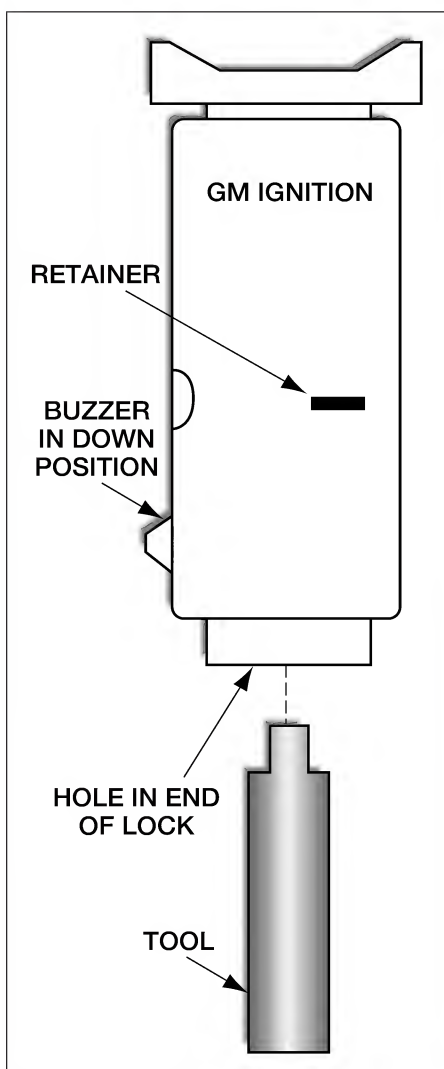
I made a tool from a piece of round steel stock to help speed the plug removal on GM ignitions from 1979 up through the late eighties (see illustration 2a & 2b).

To use the tool, remove the plug retainer from the cylinder housing,





**Illustration 2A.**



**Illustration 2B.**

measure to hold the cylinder with the buzzer activator down, insert the tool into the rear of the lock as shown and hit it with a hammer. The plug should pop right out into your hand for servicing. When finished simply re-insert the plug and replace the retainer.

Roy L. Cooper  
Texas



**STRATTEC RACING  
JACKET WINNER:  
Wood Repair Products**

I'm sure most everyone is familiar with J.B. Weld, an epoxy filler for metal. There is a great woodworking equivalent to J.B. that is made by Minwax. It's called "Minwax High Performance Wood Filler."

When you are called to install a lockset on a door where the wooden frame has been chewed up, gouged, or as often is the case, splintered, glue and stick repairs are time consuming and frequently unsatisfactory. Additionally, you often have to return later, after the glue has set to complete the job.

With Minwax High Performance Wood Filler, you mix the two parts, fill the damaged area, wait about fifteen minutes, shape the repair with a rasp or file and proceed with your installation.

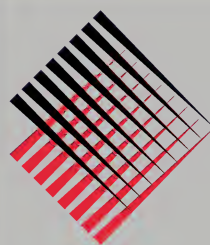
I worked in the furniture and wood restoration trade for fifteen years before we opened our full-time locksmith shop; therefore, I can state unequivocally that this is one great product that really works!

Doug Ackerman  
Kansas



**HPC PISTOL PICK  
WINNER:  
Impressioning  
Techniques**

I have taken many classes and bought every book and tape ever published on locksmithing, but it was a young locksmith who showed



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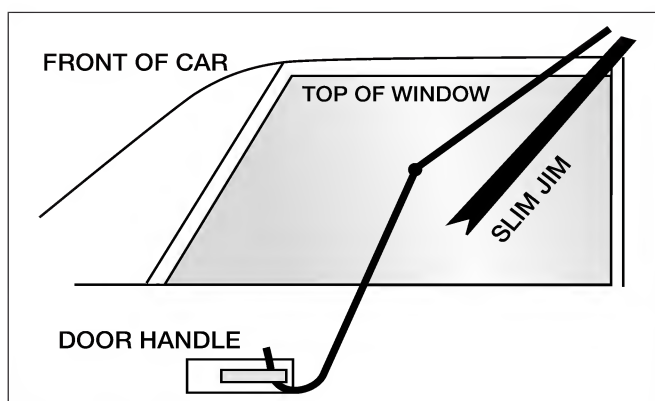


Illustration 3.

me a method of impressing that beats them all.

First cut the proper blank on your code machine by cutting it to all number one depths. If the vehicle you are working on is a no-cut for the one depth, then lightly "score" the blank on your code machine to get accurate spacing.

Now insert the key, bind the pins to the left and begin to lightly work the key in an oval motion four or five times. Remove the key and look for the largest pin imprint in each of the spaces. Cut those spaces to the next lowest depth.

Repeat the process, always looking for, and cutting, the largest impressing mark in each space. Make sure to use a light oval motion while impressing.

Occasionally the key will show more than one mark. Just be patient and let the key tell you what to do. Remember that you only cut the largest impression mark. If you want to speed the process, use an MBA magnifier from Mark Bates Associates. I think it's a great tool for your impressing kit.

This tip will work just as well on wafer locks. I can usually generate a key using this method in five minutes or less.

Tom Perkins  
Wisconsin



**SARGENT &  
GREENLEAF WINNER:  
Neon Opening**

I encountered a man that locked the keys in his rental car and needed the car opened immediately because it was due to be returned in 1/2 hour.

The car was a 1997 Dodge Neon. I didn't have my opening tools or books with me in my car, but I did have a Slim Jim and a couple of metal coat hangers in my trunk.

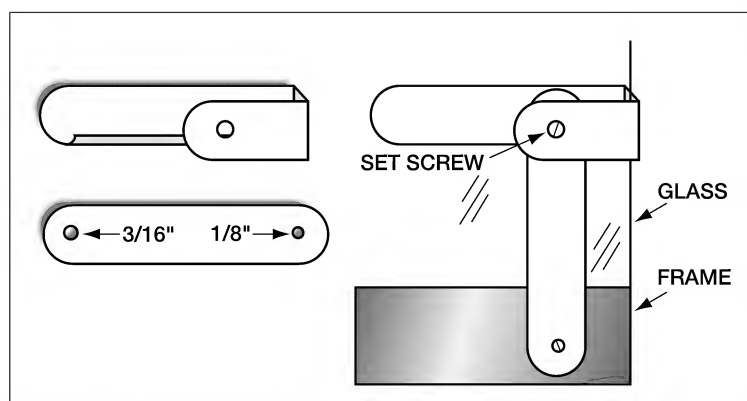
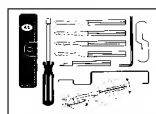


Illustration 4.

As you can see in illustration 3, I hooked the coat hangers together and used the Slim Jim to separate the window from the weather stripping and act as a "slide" for the coat hangers. Then I just reached in with the hangers for the door handle, grabbed it with the "hook" pulled up and out and the car was open.

Robert S. Magan  
New York



**A-1 SECURITY  
PRODUCTS WINNER:  
Showcase Security**

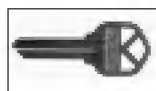
At a high school where I do work, there was trouble with students opening show case locks. They were sliding the locks up the door, pulling the glass apart, and taking the locks off the doors.

I solved the problem by cutting a piece of metal 1/2" wide and four to six inches long. Then I drilled a 3/16" hole in one end and a 1/8" hole in the other (see illustration 4).

I removed the rubber pad from the set screw, put the 3/16" end of the metal strip on the screw and replaced the rubber pad as shown in the illustration. Next I reinstalled the lock on the showcase.

As illustrated, the metal "tab" that I cut, hangs down and over the frame of the door's track. I used a #4 screw 1/4" long to attach my "tab" to the frame. This prevents someone from prying the glass out far enough to manipulate the lock and remove it.

Frank Spencer  
Oregon



**SILCA KEY BLANKS  
(100) WINNER:  
Battery Charging On  
The Fly**

The charger for my battery operated drill gave up the ghost and I could not find a new one that would handle my 14.4 volt battery (none of the connectors would match).

After thinking about it for a while, I used my VOM to check the voltage off the alternator in my truck. That voltage was 14.4 VDC! I bought a plug converter for the cigarette lighter in my truck and after carefully checking for proper polarity and proper voltage, I took my defunct charger apart, removed the step-down transformer and fit the plug wires to the wires of the battery connectors.

I rechecked all the terminals (which I had soldered into place), rechecked the voltage and polarity and tried to charge one of my batteries. It worked fine. Now, I can recharge my batteries driving to and from various jobs. Or, if I am on a relatively large job, I can plug in a battery for charging, start the van, lock the doors and go about my work until I need the newly charged battery.

I feel certain this would work for a 12VDC system as well.

Bob Buhler  
Utah



**PRO LOCK PK 15  
PROFESSIONAL PICK  
SET WINNER:  
Mobile Home  
Deadbolt Installation**

Mobile homes can often present a challenge when it comes to installing deadbolts. Here's an idea I came up with several years ago and have used several times since.

Using any brand deadbolt you prefer that is available with a 5" backset bolt, I install the deadbolt - at the appropriate backset - in the wall of the mobile home and allow the bolt to throw into the edge of the door.

I find this can be a very effective and secure installation on many older mobile homes that have screen doors which also swing outwards like the outer door does. There is often not



enough room between the screen door and the outside door to allow for the mounting of the deadbolt on the door.

Greg Kline  
E-Mail



**TECH TRAIN  
TRAINING VIDEO  
WINNER:  
Pin Kit Maintenance**

I once worked for a store and the pinning kit I used was very, very worn. In fact, it was so worn that most of the numbers had been obliterated and could not be read. Pins had also been crushed into the lid destroying information that was written there.

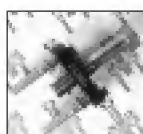
When I went on my own, the first thing that I did was to obtain clear self-stick plastic sheeting which I cut into small strips and stuck over the numbers of the pins in each compartment or tray. Then I used larger sheets to cover the information that was on the lid of the kit.

Now, after five years, the numbers and information on the lid of the kit are still as legible as they were the day I put the kit into service.

To prevent the kit from marring a table top or counter if I take the kit

into a customer's location, I also bought some stick-on felt and attached it to the bottom of the kit.

Dave Dewers  
Michigan



**SIEVEKING PRODUCTS  
GM E-Z WHEEL  
PULLER WINNER:  
T-Bird Ignition  
Removal**

A customer's key would not operate the ignition of their 1992 T-Bird. I felt that it was a sidebar problem and decided to see if I could remove the ignition and repair the problem without drilling it out.

After carefully looking over my options, I decided to remove the bottom shroud, lift the top portion out of the way and drill a very small (1/8") hole in the ignition housing 7/8" back from the rear of the ears on the ignition and slightly above the keyway centerline.

Since there is limited space between the ignition and the dash, I used a right angle drill attachment (Harbor Freight Tools E01447-4JDB). I used a short bit because it only needs to protrude from the chuck about a quarter of an inch. This hole allowed me to put

pressure against the side-bar (the spring on one end had come loose) and use the customer's key to turn the ignition to where I could depress the retainer and remove the ignition for repair.

Robert Thaut  
Washington

**Major**  
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**MAJOR  
MANUFACTURING  
PRODUCTS  
WINNER:  
Poxy Pouches**

I came across a new product that I think would benefit all of us. It's Loctite's Poxy Pouches (Loctite item number 82515).

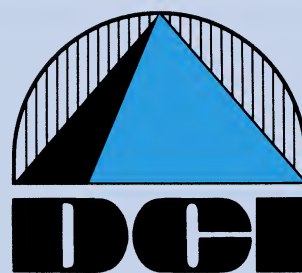
The Poxy Pouches come in packs of four and are four gram units with both halves of the epoxy in the same pouch. Just squeeze to break the inner seal, knead the pouch for ten to fifteen seconds and cut the tip to pour the contents. The material sets in five to ten minutes and can be sanded, drilled and painted.

Because the pouches are pre-measured and sealed for individual use, I can carry them in the van without being concerned about spillage or premature hardening. No



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stirring with a toothpick or screwdriver and no messing with clean-up. Best of all, the pouches are affordable for field use - less than a dollar each in the four pack.

I have used Poxy Pouches for safe repair, as a filler for floor bolt installations and in the usual cementing applications. I'm telling you: Poxy Pouches are great!

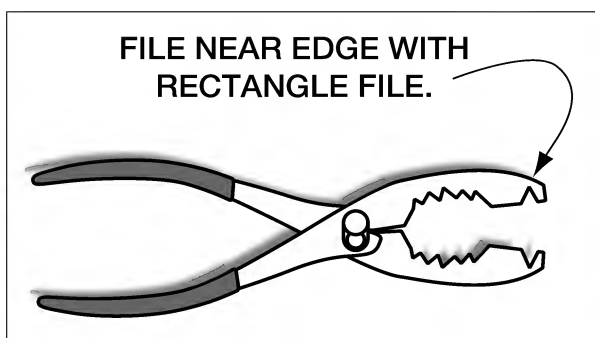
Les Moyer  
Pennsylvania



**SLIDE LOCK'S "Z"  
TOOL OPENING SET  
WINNER:  
Face-Cap Pliers**

Here's an idea for an economical pair of face-cap removal pliers.

Find an old pair of pliers that you don't use. Then take a rectangular file, file a notch in the tip of the jaws as shown in *illustration 5*. File both jaws.



**Illustration 5.**

I have used the pair that I made on both American and import vehicles without a problem.

Teddy Poulos  
North Carolina



**1995  
THE SIEVEKING AUTO  
KEY GUIDE WINNER:  
Re-Keying the  
Oddball**

This tip concerns the spacing on some of the cheaper O.E.M. mortise cylinders that are on aluminum, narrow stile doors. Particularly VistaWall and Teskey (Y-1).

I have found that the spacing is the same as Schlage and the depths are Yale equivalents. To rekey these, I recommend that you cut a Schlage key on a Yale blank and pin accordingly. Or, if you have a Framon code machine, you can cut these cross spaces and depths easily. However, you should stay away from the deeper cuts when doing this.

If you are trying to masterkey these cylinders, you should recommend to your customer that they replace these cylinders with quality locks that will not present problems for either of you. Believe me, the only thing I think these cylinders are fit for is to keep around to sell to the customer that is looking for inferior quality merchandise at bargain basement pricing.

Chris Gonzales  
New Mexico

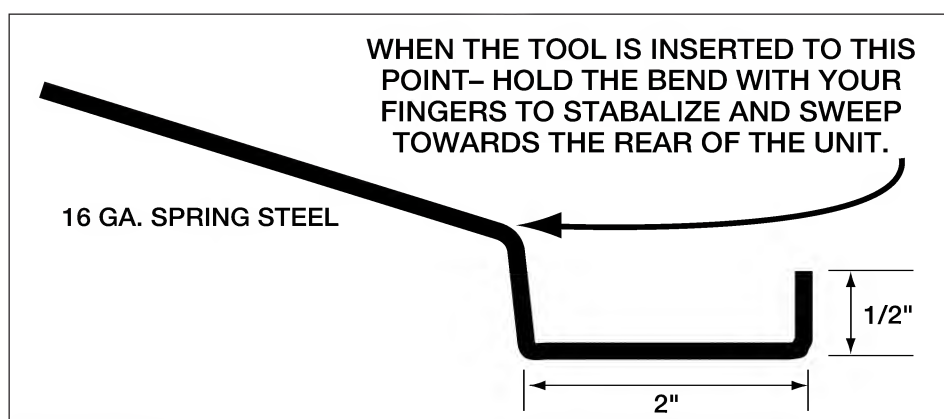


**JET KEY BLANKS  
WINNER:  
Lock Override**

A commercial customer called and said that when he tried to remove his key from a lock cylinder, the insides fell out. I assumed the tail piece or retainer came off the back of the plug.

When I arrived at the job site, the manager of the store was standing on the sidewalk with all the pins and springs that he could find in his hand.

Although I had encountered this problem before, I had never dealt with it from the outside of a locked building. This made it more difficult because I couldn't access the door edge to remove the face plate and service the Adams Rite lock.



**Illustration 6.**

I used a stiff piece of wire with a small right angle bend in it, inserted it through the cylinder's plug cavity and flipped the Adams Rite dead-latch down. I then repaired the customer's plug and lock.

R. J. Bent  
New York

**HIGH TECH  
TOOLS WINNER  
T-Turn  
Conversion**

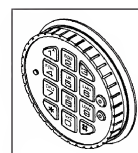
If a customer requests a thumb turn for a storm door equipped with a Papaiz double profile cylinder, take the cylinder out of the door and insert a working key into it.

Use a #29 drill and an 8-32 tap and drill and tap a hole through the side of the cylinder, through the plug, through the key and into the other side of the plug.

Now thread in an Allen set screw (8-32) that will thread flush, dress the side of the cylinder with a fine file or emery cloth and reinstall the lock.

Your customer now has a permanent thumb turn on the Euro style lock.

Merlin  
E-Mail



**LAGARD COMBO  
WINNER:  
Gunvault Opening**

Here's a quick, easy, no-drill way to open a Gunvault gun safe with the tubular key override. This method is effective when the combination and keys are lost, the batteries are dead or the locks have malfunctioned.

First make the tool shown in *illustration 6*. Then lift the corner of the rubber fingerpad directly below the tubular lock. Under this pad you will find a hole that is used for alignment of the rubber pad. Insert the tool in the hole (facing to the right and towards the door).

Once the tool is inserted, hold the bend with your fingers and sweep the tool towards the rear of the safe to trip the spring latch. Be careful, the spring loaded door can open very quickly.

Rod Snell, CRL  
Pennsylvania  
**TNL**



# The ~~WORTER~~ Side

"Cut It Out!"



by  
**Sara  
Probasco**

**"A** hundred and sixty dollars for one key? You've got to be kidding." The man stared incredulously at Don's bill.

Don sighed. He was eager to climb into his van and make the thirty mile trip back along winding Hill Country roads in the dead of night. It was the only way he knew to get home and back to bed. Instead, he started into an explanation of charges — something he had come to expect, under the circumstances. Customers rarely understood the cost of making keys from scratch when out in the boon-docks, late at night.

"First of all, it's midnight," Don said. Then there's the cost of mileage out here," Don pointed to that line on his bill, "the trip charge, cost of labor for pulling the steering wheel..."

"Yeah, yeah, I see all that," the man said, "But a hundred and sixty dollars!"

"Would it make you feel better if I was to throw in a second key, for free?"

The man looked at Don in disbelief. Then he shook his head, huffed a little chuckle, and a slow grin spread across his face.

"Yeah," he said. "I don't know why, but yeah, it would."

Don cut him another key while the man counted out the money.

"This feels like a bargain." The man was smiling.

Who would've ever thought an eighty dollar key would seem cheap?

Don and I laughed about this later. Customer opinion about the cost of keys has been a source of mild humor around our shop for years.

"Speaking of bargains," he said, to me, "Were you in here the other day when that lady bought a bunch of our Aggie key rings?"

For those who don't know what these are, we take our mis-cut keys, drill a small hole in the tip, ring them with a gimmie key ring, and sell them for "fun" key rings. The poor Texas Aggies get the brunt of jokes, around here, much as various other collegiate and ethnic groups do in other parts of the country. We keep a box full of these beside our cash register on our check-out counter with a little sign that says: Aggie Key Rings - 25¢ each, or 3 for \$1.00. True Aggie pricing! (You'd be surprised how many we sell in a year's time!)

"She looked at the price," Don continued, then she said, "If I buy a dozen, can I get them at the bargain price? I asked what she meant, and she said, "Well, I don't want to have to pay twenty-five cents a piece, when I can get three for a dollar."

I giggled. "What did you say?"

"Well, I looked at the price card, then I looked at her. I thought she was kidding. But she was solemn as a judge. I asked her if she'd read the price card real carefully, and she said yes, that's why she was asking if the dollar pricing applied on purchases of more than three, because four dollars was all she wanted to spend on the dozen."

"But twelve would only have been three dollars, at the regular price of twenty-five cents each," I said.

"I know, I said, but she apparently didn't realize the price sign was a joke."

"What did you do?"

"I was really kind of hesitant. This woman didn't seem to have much sense of humor, and I didn't want her to think I was making fun of her, so I said, "Tell you what I'm going to do. If you take a dozen, I'll let you have them for three dollars, instead of four." She was tickled to death, thought she'd gotten a real bargain."

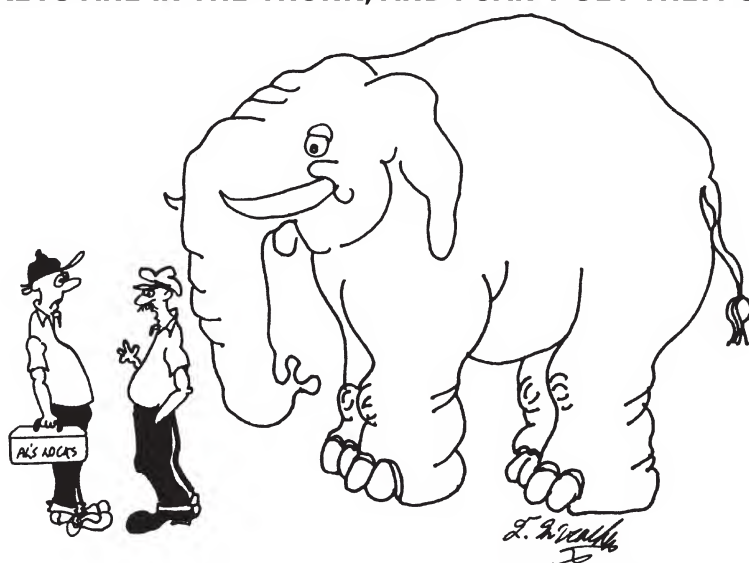
"People just don't understand key pricing, do they?"

Remember when that customer came in and asked Ted the price to duplicate a certain key, and when Ted told the man it would be a dollar thirty, he began to read Ted the riot act?"

"Why I can get one at WalMart for eighty-nine cents," the man had bellowed, "Only they're out of them."

Ted didn't crack a smile. "We'll only charge you eighty-nine cents for the keys we're out of, too," he quipped.

**"MY KEYS ARE IN THE TRUNK, AND I CAN'T GET THEM OUT."**





**T**hat's a lot like the time Chick Smith was filling in at the shop when we were out of town," Don added.

"You mean, when the customer objected to our key-price, saying, 'I can get a key at WalMart for eighty-nine cents?'"

"Right." Then Chick handed him an uncut key blank and said, "Here's one I can sell you for eighty-nine cents." The guy took it out to his car to try it out, but he was back a few minutes later, saying it wouldn't work."

"That's when Chick told him, 'Oh, when you told me you'd been going to WalMart, I didn't realize you wanted a key that worked. The ones that work are a dollar thirty.'" Don wiped tears of laughter from his eyes. "That was choice."

"Speaking of selling key blanks, I guess you heard what Keith pulled the other day?" I said.

"He'd spent a good bit of time locating the right blank for a customer's key. After he finally found it, he made out the cash ticket, handed the key to the customer, told him the price, and added our usual admonition to try the key in the lock to be sure it worked."

"So...?"

"The customer looked at the key, looked at his original, looked at the bill, looked at Keith, looked at the key again, and finally said, 'Isn't this supposed to have some of those little points on it?'"

"Don't tell me."

"Right. Keith had been so busy finding the right blank, he forgot to cut it."

After Don's laughter subsided, he said, "Speaking of finding the right blank, I had an unusual thing happen today."

It seems a man had brought in a General Motors ignition key to be duplicated, but the one Don cut for him wouldn't work in his vehicle. Don walked out to the parking lot to see what the problem was, and there stood an old model Ford Falcon!

"GM key, Ford Falcon vehicle. Hmmm! No wonder it wouldn't work," Don thought. "May I see your original key again?" he asked the man.

Sure enough, it was a GM key.

"This can't be the key to this car's ignition," Don said, but the man insisted that it was. To demonstrate, he got into the car and started it, using the GM key.

"Well I'll be," Don muttered.

Taking a one-sided Falcon key back outside, Don managed to impression a new key for the man, but try as he would, he never could cut a working duplicate on either a Falcon or a GM blank, no matter what key machine or tools he used.

"Sometimes this business is like trying to work a jigsaw puzzle when you don't have a picture to go by and a bunch of pieces are missing," Don said when telling me later. "Just about the time you think you have everything figured out, a new image pops up."

"It's not things popping up that bother me," I said. "It's the things that keep disappearing! Speaking of which, what ever happened to the little serrated knife I keep at my desk?"

But that's another story.... **TNL**



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# Frequently Asked Questions

by Joe Bucha, CML and Dee Bucha, CPL

**F**requently asked questions: we all have them. If you deal one-on-one with off-the-street customers, you might recognize some of these: "Do you cut keys?" "Can you open my car?" "Do you have a master key to my building?" And that all time favorite: "Can you use wax to make an impression of my lock?" If you're a guard working inside the perimeter security you will often hear, "What time is it?" or "Can't you let me out of here for a few minutes?"

It's tempting to hang a sign that answers all those FAQ's at one time, but for some of you that sign would take up a lot of your work space. Yes?

We have them too. Fortunately, we have a very convenient billboard called The National Locksmith, so, we're going to take this opportunity to address some of the questions we answer on a weekly, and in some cases, a daily basis. Maybe it will save you a phone call.

**Q.** Why do I have to provide an authorization letter whenever I want to order a key?

**A.** Key Control! The manufacturers keep detailed records of the keys, keyways, their codes and the facilities

where those codes and keyways are assigned. In addition, they have the added worry of being extremely responsible for whose hands the keys reach. Can you imagine the repercussions of an unauthorized individual holding keys to all the cells in a given cell block? Or, even worse, keys to the entry gate of a prison or a munitions lock up? The authorization letter is a method of assuring that you are authorized to order the keys and that the keys you are ordering are indeed for the facility to which the keys are assigned.

For the same reason, jail and prison keys are never shipped to anyone other than a bona fide police station, detention facility or prison. The authorization letter should be written on facility letterhead and signed by a bona fide representative of the ordering facility. It should contain complete data on key codes and the number of keys required for each code. Keys are never shipped to dealer/locksmiths, prison guards or private and business addresses for security purposes.

**Q.** Can you provide me with lock specifications, parts breakdowns, wiring diagrams and installation information?

**A.** Yes and No. That's really two questions and we do have to add some caveats.

We can send you specifications for a given lock and parts breakdowns, but it usually takes more than a few moments. First we have to locate the proper paperwork, get them to a copy machine, reproduce the page or pages you require, and prepare them for mailing. This is not our normal routine, but it's frequently caught by our customer service net. We often fax the information, but need to warn you that the pictures of a given lock or locking device do not produce well. (Graphics don't always come out perfectly on fax machines, but the written word is usually very readable.) We cannot provide you with our originals, because we have a very limited supply and I assure you that many people want them, just to have them.

Wiring diagrams and installation information is also a yes...but a highly qualified yes. Due to constraints by the manufacturers, these are not supplied until after an order for a given product has been placed by the customer. Unlike lock specifications we don't have them at our fingertips.



When we need them, we obtain them from the factory. They, in turn, have to take time out from their "regular" job and research what is required, copy it, fax to us, so that we can then fax it to you. As for installation templates, they vary with the materials used, and once more they must be researched. In a few cases, they might even need to be drawn from scratch when there is a unique application or installation. Most manufacturers supply requested templates only after receipt of a bona fide purchase order.

**I**n all honesty, the factories simply can't afford to research, prepare and mail detailed information to every bidder in the country. They would literally find it necessary to hire an entire department for that sole function! And remember that really important word, SECURITY. Templates, installation and wiring diagrams can do a great deal of harm in the wrong hands! After all, those aren't the "boys/ girls next door" we're locking up!

**Q.** I'm a locksmith. Why can't the manufacturer ship keys to me? I'm trusted with masterkeying, locks, safe combinations, even bank vault work.

**A.** We understand. Locksmiths have a very high degree of integrity. No one questions that! Yet, from another point of view the manufacturers are doing you a favor. In a word, that favor is a matter of liability.

It's one thing entirely should we allow a master key for an office building to reach the wrong hands. (No matter how careful we are, accidents occur!) We all know quick (or semi-quick) methods for solving that problem fairly efficiently...and while it would cost some time and revenue to remedy that problem, most of us could handle that liability easily enough.

If a detention facility key is "misdirected" in any way, shape, or form, we're talking a lot more liability than mere money! Some prisoners and criminals are very unfriendly people. If they wander away due to your error, the liability here could include harm to or even death for another individual. The locking systems and keys are expensive but that cost is finite. The price of a human life is immense...and you don't want to live with that!

Let the manufacturers ship the keys to the facility...and let the facility handle the liability!



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**Q.** How do I get into the detention business. I hear it's very lucrative!

**A.** It is lucrative. And there's no trick to getting into the business. It's no different than getting into the car opening business or the safe business. You need the same basic tools: education, experience and targeting the accounts you want.

We talked about education in a prior article. If you're a locksmith/dealer, go to your nearest association and ask for a class. If you're an active on-site prison locksmith, give us a call.

**E**xperience is different only in that you are clearly in a hostile environment. You're going to have to use a lot more care inside a detention facility than down at Grandma Smith's apartment. And remember that ever-present liability issue. Your first concern is for your own safety. Stay alert on the job. Ask the guard to stay nearby...and even better, ask that any prisoners be removed from your working area. Keep your tools out of reach. Don't carry anything in that's not essential to the repair or replacement of a lock. Inventory the tools when you go in...and inventory them again when you leave. Ask for technical assistance when you need it. Always double check the operation of a lock and be certain it's working before you leave.

As for targeting your market; direct your time and attention to the sheriff or jail administrator in your local city and county facilities. Most large city and county facilities, including most state and federal facilities have on-site locksmiths assigned. As in any other skill, you have to start with the basics and work your way up. I don't know too many safe experts who manipulated a vault door open on their first job. And I can assure you, we didn't repair a multi-microswitched electro-mechanical security device as our first detention job, either!

If you're stuck, give us a call. We'll do our best to help.

**Q.** I've got this jail lock on this door frame and I have no idea how to identify what it is!

**A.** We get this one a lot, so don't feel as if you're the lone stranger! It's not anything to be embarrassed about. In fact, it's no different than those early days when you stared at your first Corbin or Yale sectional and thought, "What the devil is that?," but you said sagely to your customer: "Now this is a very special key, and I'm going to have to do a little research..." Customer's happy, because he knows he has a really good lock and you're happy because you bought some time.

Like any other technique, identifying a lock has certain rules. First, pay close attention to detail. Unlike standard builders hardware, detention locks are far from standard, which is why we call it "roll-your-own hardware." Time for twenty questions: Is it pin or lever tumbler? If pin tumbler, is it commercial hardware or is it a very large (mogul) cylinder? Is there a cylinder on one side or two sides? How big is it? (Yes, we expect you to measure it.) Does it have knobs? Are they inside or outside...or both? What kind of door is it mounted on? (Wooden or metal, is it mesh, solid or bars? Is the door swinging, sliding, or vertical lifting?) Perhaps its not on the door at all. Is it mounted in the jamb? Is it electrically, mechanically or air operated? If electrical, is it fail safe or non-fail safe? Do you know the correct voltage requirements? Who is the manufacturer? Is it a latch or bolt...and does it have deadlocking capability?

See what we mean? The question "What kind of lock do I have?" without this information is a lot like saying to a car opening expert, "How do I unlock a blue car?"

*Continued on page 87*

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*Continued from page 84*

If you're lucky enough to have the lock in your hand, look for a dataplate (usually a plastic covered stick-on label wrapped around the exterior of the lock case). If you're REALLY lucky the sheriff will point out to you that his Folger Adam #17 lock is giving him trouble and what would it cost to replace it. In most cases, however, trust yourself...not your luck!

As for troubleshooting and repair, the mechanical locks follow the same basic laws of physics you handle daily. Pins stick, keys wear, bolts fail to retract fully, doors are misaligned, hinges sag, and frequently, employees don't use the locks correctly.

**Q.** You can't be serious about these prices!

**A.** We agree the prices may seem very serious. They're certainly not what you're used to. And, yes, we know the key prices are a very big shock. Think of jail and prison locks compared with your every day locks as the difference between a home safe and a bank vault. How many are there, comparatively speaking? Keep in mind you're dealing in a very small niche market. Above all else, ask yourself, "What am I locking up?"

Nuff said?

**Q.** Did I just hear you say sixteen weeks delivery time?

**A.** Occasionally you will hear us say sixteen weeks. Please be clear that normal delivery time in this field is six to eight weeks. If the factory is backlogged, which does occur, the waiting time gets longer. Remember that these manufacturers main business thrust is new construction. They really are not geared for single lock sales and distribution. If the factory has geared up its plant to produce five thousand #17 locks, they have a hard time pulling someone from the line for onesies and twosies. Ask yourself what you would do if you were in the middle of a 4000 room masterkey job and someone asked you to leave the job site to cut an auto key?

If you're still not convinced, go back to the phrase "roll-your-own-hardware." Detention locks are not ordinary stock, like an A53PD in 26D. Re-read the methods of identifying a lock. Compound those questions by the various sizes, shapes, functions and options available in this field, and you'll have some notion of the complexity of delivering a single lock to a facility's specific needs.

**Q.** We need to secure this door. It is an emergency. Why can't I have these parts overnight?

**A.** The only bonafide emergency in the detention field is a jail break or hostage situation. When either of these situations occurs you won't want to be involved with repairing the lock. We don't mean to be unsympathetic, but everyone considers their particular problem "an emergency." Both the manufacturer, and we, will do our very best to supply the parts you need, at the earliest possible time. Meantime, ask the sheriff or jail administrator what other options are available. There is usually a spare cell, or a spare lock, or even a spare part, when the chips are down. Lock repairs, like auto repairs are sometimes put off until there's no choice. Don't put yourself in the awkward position of promising parts delivery times that are totally unrealistic in this particular segment of the industry.

**G**ive us a call when you have questions. We're as close as your telephone, and the telephone is often the best teaching tool you have when you require instant answers. Between the hours of 8 and 5, local Texas time, we're faster than E-mail. **TL**

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# BEGINNER'S CORNER

## Servicing the Master Lock Deadbolt



by  
**Jim  
Langston**

**E**ven though Ingersoll-Rand now owns the Master Lock hardware division (they also own Schlage) there are still a number of Master Lock hardware products in service.

The double cylinder 14009 meets ANSI Grade 2 standards, is designed to fit a 2-18" crossbore hole and 1" edgebore. The latch bolt is a die cast bolt with a hardened steel pin inside offering a 1" throw. The strike is solid steel and comes with extra long security screws. The cylinder has a solid brass plug and comes standard with a 5-pin tumbler.

For those that don't know, Master Lock purchased the Dexter Lock line and much of the hardware is very similar. Servicing this lock is fairly easy and straight forward. Servicing procedures follow, which should prove to be fairly painless.

Servicing the Master Lock Deadbolt is somewhat different from the knobset or leverset, but is also rather simple (see photograph 1). The first thing you must do, is to remove the cylinder retaining screw (Phillips head), then slide the cylinder assembly out of the

deadbolt housing. (see photograph 2). Set the deadbolt assembly aside to reassemble later.

Now remove the C-shaped retaining ring at the rear of the cylinder housing using a small, flat blade screwdriver. This will allow the tailpiece to be removed from the plug (see photograph 3).

To remove the cylinder assembly from the cylinder housing, you must turn the plug so the pins are no longer aligned. You may do this by turning the key to the 2 o'clock position (30 degrees clockwise).

Using a hollow following tool, slide it over the end of the plug and push the plug out of the cylinder housing. You may rekey the plug (see photograph 4).

To re-assemble, insert the plug into the housing, install the tailpiece and snap the retaining ring on the end of the plug. You can now put the cylinder assembly back into the deadbolt housing, replace the cylinder retaining screw and the lock should now be finished (see illustration A).

As with most deadbolts, they are usually much easier to service and disassemble than their knoblock counterparts. The Master Lock Deadbolt is no exception, it is a very easy lock to service.

I am not sure what will become of the Master Lock hardware line. Now that Ingersoll-Rand owns the product, I believe the name Master will be dropped. Whether the line continues to exist only time will tell. **TNL**



**1. The Master Lock Deadbolt.**



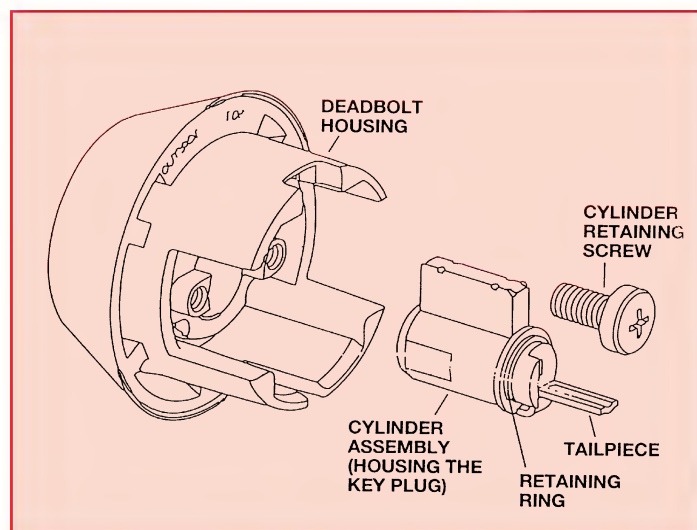
**2. The first thing you must do, is to remove the cylinder retaining screw.**



**3. Remove the C-shaped retaining ring at the rear of the cylinder housing using a small, flat blade screwdriver.**



**4. Using a hollow following tool, slide it over the end of the plug and push the plug out of the cylinder housing.**



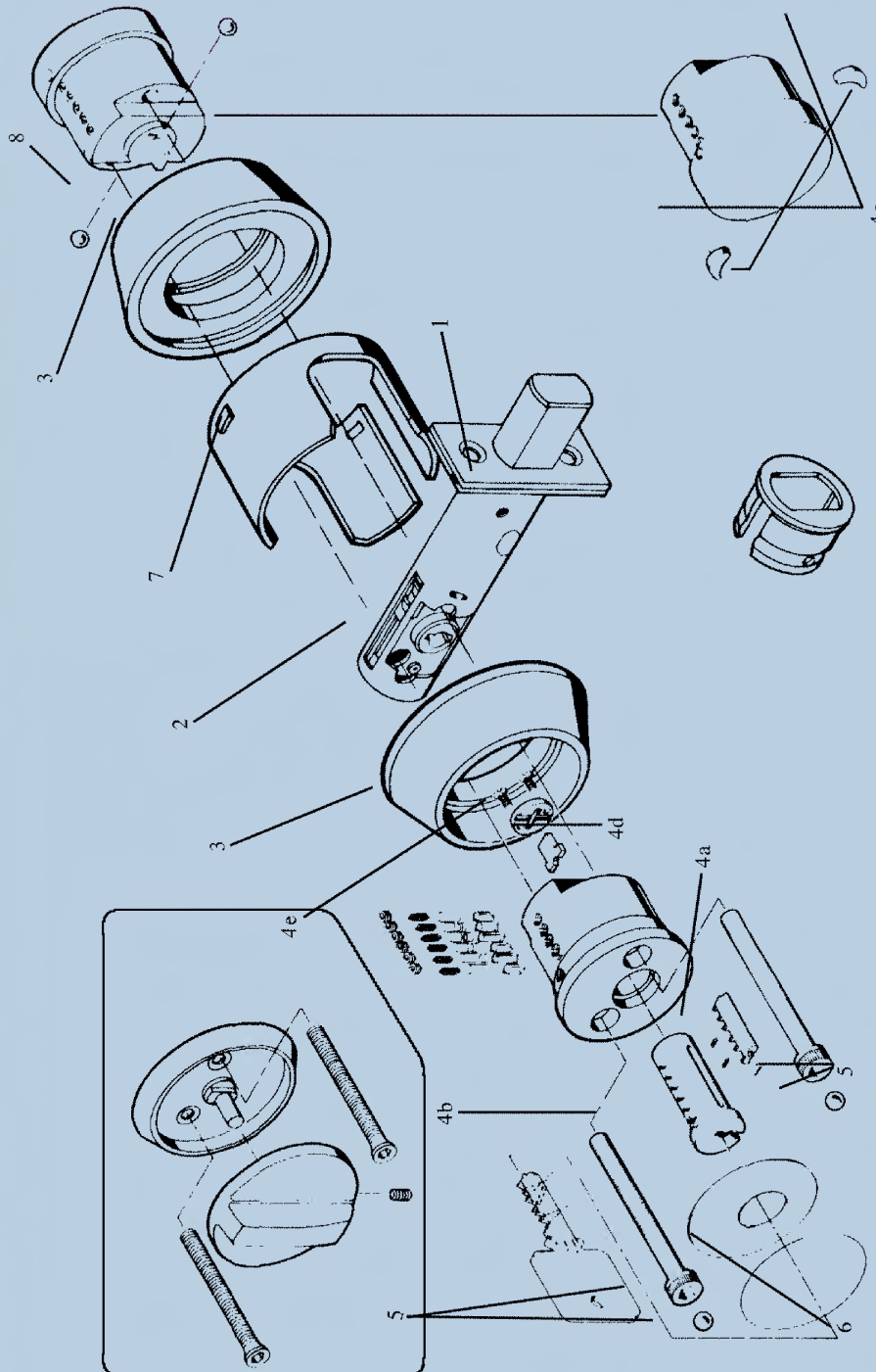
**A. The main components of the Master Lock Deadbolt.**



# EXPLODED VIEW







**Features:**

1. 2" hardened solid steel "anti-saw" bolt in deep drawn steel case. Total bolt length 2" with 1/4" backset models (1" throw).
2. Positive deadbolt action.
3. Tapered, wrench resistant, free spinning solid brass cylinder collar and guard.
4. Solid brass 6-pin Medeco cylinder incorporating:
  - a. Medeco double-locking action
  - b. Hardened steel anti-drill inserts
- c. Anti-pry allen set screw pins covers
- d. Positive action tailpiece
- e. Closed key way tailpiece retainer.
5. 1/4" diameter high tensile strength steel retaining screws. Protected by drive fit steel balls on double cylinder function.
6. Cover plate conceals retaining screws.
7. Hardened steel shield protects latch area.
8. Hardened steel balls deflect drill from retaining screw area.



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Centre, AL

Model: 1997 Chevy  
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## Road Rally



Owner: Perry M. Berry,  
Tallahassee, FL

Model: 1996 Chevy  
1500 Pickup



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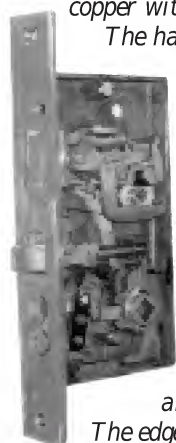
[www.laserkey.com](http://www.laserkey.com)



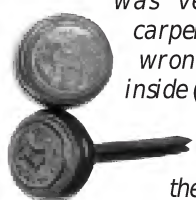
# Reed Report

In the February issue, page 106, concerning the Ringling Brothers mortise lock, John Hornung wrote to me saying he had seen one and wanted to pass along what he remembered about it:

*The house the lock was on had very large doors with very thick edges, and was built in 1920. The lock knobs were solid copper with a cast brass filigree insert in the center of them.*



*The handle rod was a two piece construction of steel and screwed together in the middle. The cover plate on the door had a beveled edge of solid copper and was very tall. A heavy-handed carpenter had turned the knob the wrong way and broke off a piece inside (see photograph).*



*Turning the handle one way did nothing, but turning the other way forced a lever to act against a cast iron "L" shaped cam approximately 2-1/2" x 2". This piece was broken and the machine shop make a new one for \$100.*

*The edge plate of this lock was copper colored steel, and the body of the housing was cast iron. It had a Corbin mortise cylinder in it with 6 cuts to activate the lock. No brand names were to be found anywhere on the lock itself, inside or out. I doubt it was imported since all the screws were American thread. Hope this adds some light to the situation.*

It certainly does, Mr. Hornung, and I thank you for taking the time to write.

**Q.** I am fairly new to locksmithing and just ran into my first transponder. I have two questions. What is the "New Generation Star System," and is it true that there are not too many cars out there with transponders? Am I worrying prematurely?

**A.** The "New Generation Star System" is used to program new transponder keys for Ford vehicles, but this system might change. Locksmiths can check with their Ford parts department to purchase the system and the necessary software, which is a green cartridge. When purchased, a waiver might need to be signed because there is a potential to harm the car since the machine is also used to set the timing of the vehicle.



Yours For Better Security,

*Bill Reed*  
Bill Reed

## Scatter Shooting while remembering ... Wiggy Jensen

Programming for the transponder key is just a small part of what the system does. (NOTE: Rotunda manufactures parts and equipment for Ford and sells them to the parts division. Dealer price is approximately \$1000 for the system and \$300 for the cartridge.)

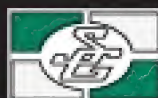
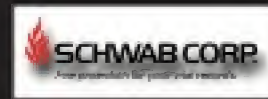
Chrysler had a system similar to Ford, but a PIN number was required and only dealers were able to obtain it. Their system cost an estimated \$2000 and was replaced by DART, which sells for about \$1000. I think Ford will eventually bring their cost down also.

As far as your question about being prematurely concerned about transponders because there are not that many out there... the answer is NO, NO, NO. You are not prematurely concerned because there are a LOT of them out there, and soon there will be many, many more. Take a look at this list of what is out there now: ACURA (two models), BMW (four models), BUICK (one model), CADILLAC (two models), CHRYSLER (two models), DODGE (one model), FORD (seven models), HONDA (three models), INFINITI (one model), JAGUAR (two models), JEEP (one model), LEXUS (five models), LINCOLN (four models), MAZDA (one model), MERCEDES (six models), MERCURY (four models), PORSCHE (one model), and TOYOTA (two models). This count comes to 48 models on 19 different manufacturers. And you say there are not many out there? Think again! Don't fear, however, Michael Hyde, has come out with a GREAT book on Transponders. Call me to get one sent out to you, or to just discuss the details of the book. **TRM**

If you have a question for Bill Reed, would like to talk to him concerning anything in this column, or want to attend a Bill Reed seminar at one of the locations listed below, you may contact Bill directly on his toll free number at: (888) 801-2003.

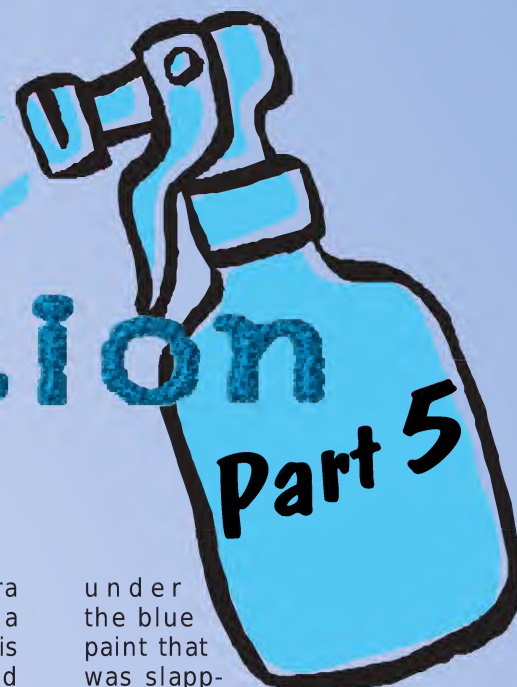
May 2	Phoenix, AZ	Sept. 26	New Braunfels, TX
May 16	Indianapolis, IN	Oct. 11	Chicago, IL
June 6	Seattle, WA	Oct. 17	Omaha, NE
July 18	Columbia, SC	Nov. 7	Salt Lake City, UT
Aug. 1	Kansas City, MO	Nov. 21	Tulsa, OK
Aug. 15	Memphis, TN	Dec. 5	Orlando, FL





# Safe Restoration

by Lynn A. Burman, CPL, CJS



**W**hew! We have been working on the restoration of this safe for five installments now. This is about the average amount of time that it will take to restore a safe when you are only working on it when you have nothing else to do. Plan on a complete restoration taking six months to a year, especially if you are having plating or machine shop work done.

This month we will go that extra mile and customize the safe with a mural. The method we will be using is identical to the method I used for putting murals on cars and motorcycles back when. I think it works even better on safes. The only limiting factor is the size of the picture and good taste.

I get my pictures from many different sources: the paper, junk mail, magazines, everywhere! I keep a file of these pictures with multiple copies if possible (this is good to do if you ever need to repair a picture), but once I use a picture I never use it again. That makes each safe that I do unique.

In *photograph 1*, you can see the original art work that was found

under the blue paint that was slapped on this container. I decided to use a mural, rather than trying to duplicate the original. If this had been for a customer that insisted on the original art work, I would have sub contracted it out to a commercial art student at the local vocational technical school.

The picture that was selected in my opinion fits this safe perfectly. My wife found the picture in one of her women's magazines several years ago and I have since been saving it for just the right safe.

First, pin or tape the picture to a piece of cardboard, then spray with clear lacquer, using either a spray can or a gun. Keep the picture on a flat surface and make sure to spray each coat on heavily, spraying left to right,

*Continued on page 108*

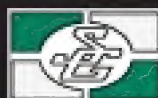


**1. You can see the original art work that was found under the blue paint.**



**2. Now remove the picture from the cardboard and trim it to within 1/4".**





Continued from page 106



**3.** Using a shallow pan, fill the pan with warm water and lay the picture inside of it.



**4.** Gently roll the wet paper off of the lacquer film.



**5.** Being extremely careful, trim picture to the final size.



**6.** Mask off the area to receive the decal and lay down a coat of lacquer.



**7.** The mural is now done.

then top to bottom, then diagonally. Allow to dry and then repeat the process for at least four days; the more you build up the lacquer coat the easier it is to work with.

Now remove the picture from the cardboard and trim it to within 1/4" of the final size (see photograph 2). Next find a shallow container, such as a large cake pan, and lay the picture flat inside of it. Fill the pan with warm water and allow the picture to soak (see photograph 3).

For the next step there is no hard fast

rule to follow. I let the picture soak from 15-20 minutes up to several days. It all depends on the type of paper that the picture is printed on. The longer the soak the more brittle the picture will become. What we are going to end up with is very much like a decal for a model airplane, except it's far more brittle.

**A**fter 15-20 minutes gently rub the back side and see if the paper rubs off. If so, you know that the lacquer has absorbed all of the ink, and the paper can now be removed. Lay the picture on a flat surface that won't be harmed by water; I like to use the kitchen sink so that I can rinse the picture frequently. Begin in the center of the picture and gently roll the wet paper off of the lacquer film (see photograph 4). Be very careful around the edges as it tears easily.





Rinse the picture often and remove the paper emulsion off of the decal. When all of the paper has been removed, place the decal on a paper towel, but do not dry it off at this time. Trim it to the final size, being extremely careful because as it starts to dry it becomes more fragile (see photograph 5).

**N**ow mask off the area to receive the decal and lay down a coat of lacquer. You can use any color that you wish. I personally usually select white; however, I used gold on this safe to give the mural an older look (see photograph 6). This coating makes the colors of the decal stand out. By now the decal should be dry.

While the paint on the door is still wet you must begin to lay the decal in place by starting at one of the edges and gently pressing the decal into the wet lacquer. It must be placed perfectly the first time because unlike a model decal you can't move or adjust it once it touches the wet lacquer.

Work from one side to the other; gently rolling it onto the wet lacquer and pressing out the air bubbles. The reason this works is that as the lacquer dries the thinner evaporates through the decal and melts it so that it bonds with the layer below it. When you have the decal down and it has dried for 10-15 minutes remove the masking from around the decal, and check for lifting around the edges.

To correct lifting use a hypodermic needle to inject some lacquer under the bubble and press it down. You may want to practice this technique on an old window pane before trying it on a customer's safe. Now give the entire door three full wet coats of clear lacquer and allow it to dry overnight.

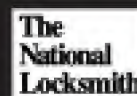
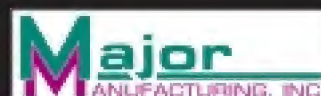
If your mural didn't turn out quite the way you wanted it to, you can sand it off without too much trouble. If you didn't get it centered on the background perfectly and you have a white border on one or more sides of the mural; use a piece of cardboard like what you get in uniform shirts and carefully spray a border on the other sides (do not put masking tape to the mural as it may lift when you remove the tape if your adhesion is less than perfect). The mural is now done (see photograph 7). Next month will be our final segment as we put the safe back together. **TNL**



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# Quick Entry

## UPDATE

by  
Steve  
Young



### 1998 Chevrolet Prizm & Toyota Corolla

General Motors dropped the GEO name this year and all of the former GEO vehicles became Chevrolets. It's important to remember that even though the GEO name appears on several different models, the vehicles themselves were all built by different manufacturers. Below is a listing of the different GEO vehicles along with the respective manufacturers.

**GEO Prizm**, built from 1989 to 1997. Manufactured by Toyota and is the same as the four-door Toyota Corolla. Note: no two-door Prizms were ever produced.

**GEO Metro**, built from 1989 to 1997. Manufactured by Suzuki and is the same as the Suzuki Swift.

**GEO Tracker**, Built from 1989 to 1997. Manufactured by Suzuki and is the same as the Suzuki Sidekick.


**GEO Storm**, built from 1990 to 1993. Manufactured by Isuzu and is the same as the Isuzu Impulse.

**GEO Spectrum**, built in 1989 only. Manufactured by Isuzu and is the same as the Isuzu I-Mark.

The 1998 Chevrolet Prizm and Toyota Corolla are the lowest priced vehicles in the world to feature side-impact airbags (see *photograph 1*). The side-impact airbags are optional equipment and are mounted in the seatbacks. No special precautions are necessary when unlocking these vehicles because none of the components of the side-impact airbag system are contained inside the doors.

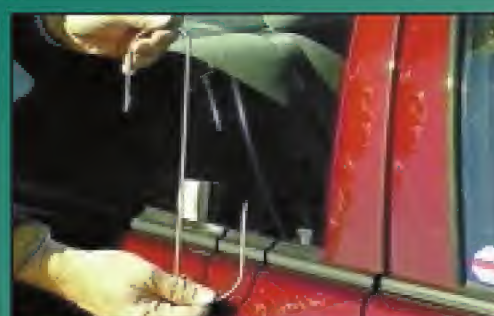
A white plastic guard shields the base of the lock button on the rear door (see *photograph 3*). This guard has a small opening at its base. The car can be unlocked with either end of the Tech-Train 1010 "Super S-Hook" through the rear door (see *illustration A*). The tool is inserted into the opening at the base of the guard and lifted to raise the inside lock button from below.

To unlock the car, begin by wedging open the door cavity of the rear door near the inside lock button (see *photograph 2*). Insert the TT-1010 "Super S-Hook" into the door and lower the tip of the tool until it is directly below the inside lock button. Working by feel, slide the tip of the tool down the plastic guard until you feel it slip below the base of the guard. Pull the tool up inside of the guard until it lifts the inside lock button to unlock the door (see *photograph 3*).

This opening can be done by feel easily, but an inspection light can also be used to help locate the plastic guard if desired. In addition, the TT-1007 tool can be substituted for the TT-1010. 



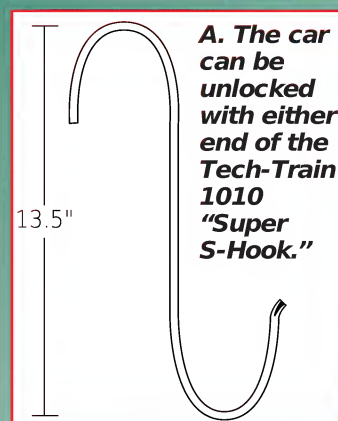
1. The 1998 Chevrolet Prizm and Toyota Corolla are the same vehicle.



2. Begin by wedging open the door cavity of the rear door near the inside lock button.



3. Pull the tool up inside of the guard until it lifts the inside lock button.



A. The car can be unlocked with either end of the Tech-Train 1010 "Super S-Hook."

#### Quick Reference Guide

**Vehicle:**  
1998 Chevrolet Prizm and  
Toyota Corolla

**Direction Of Turn  
(Passenger Side):**  
Counter Clockwise

**Tool:**  
TT-1010 (Rear Door)

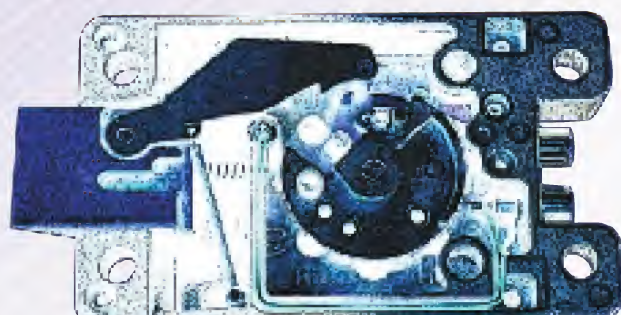
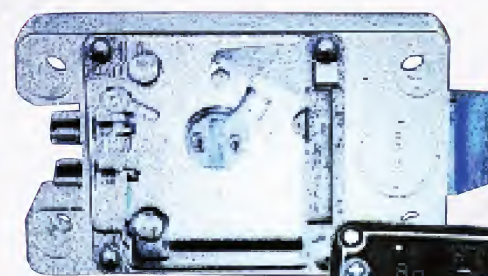
**Lock System:**  
Toyota Split-Tumbler

**Key Blank:**  
Ilco X-217, Curtis TR-47





# Legault



## CS401

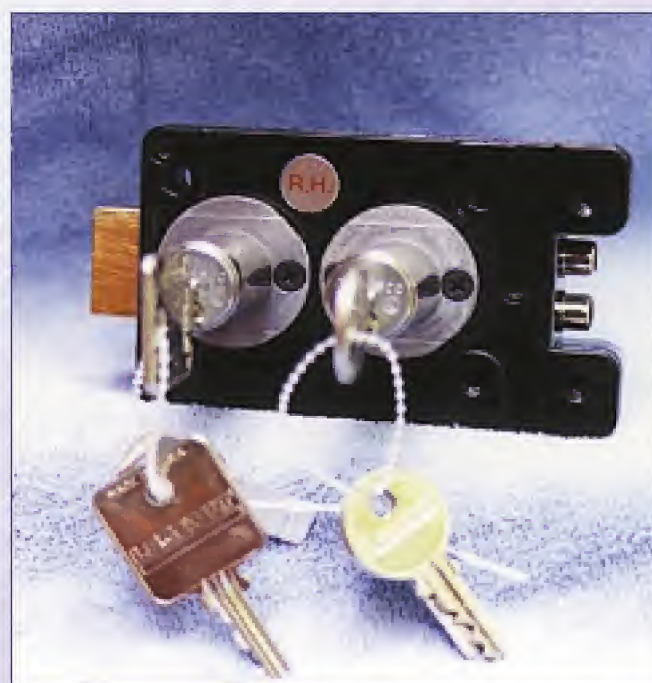
by Charles Stephenson, CPS

**L**industries C.L. Inc., of Canada is better known here in the states as Legault, but has also been seen in this country as a product from Sargent & Greenleaf known as models 6210 (knob operated) and 6211 (Medeco key operated) mechanical time-delay locks. Most recently this same lock has been reintroduced and distributed by Lockmasters and Mark Bates Associates (MBA) under the Legault name as the model CS401.

Legault also manufactures an electro-mechanical model (EM-1) which is similar to the mechanical time-delay lock. The difference is electronics replace the mechanical timer portion of the lock. Although the photographs accompanying this article show only the spring bolt design, a square bolt version is also available.

Legault has been manufacturing time-delay locks for banking and retail customers since 1972. This lock is very popular throughout Europe and Australia, not just in Canada and the United State. If you are looking for a mechanical time delay lock for light steel safety boxes, safe inner compartment doors, security drop safes, cash drawers, or to protect against a hold-up, you will certainly want to consider the Legault line of locks.

The Legault lock is available in several different configurations such as: knob operated (not shown), single Medeco cylinder operated (see photograph 1), key operated with key bypass (see photograph 2), and knob operated with key bypass (see photograph 3). The knob and cylinders are



**2. The Legault key operated time-delay lock with a key bypass.**

**1. The Legault lock is available in several different configurations such as with a single Medeco cylinder.**



**3. The Legault knob operated lock with a key bypass.**





available in lengths to fit 1/2", 3/4", 1", and 1-1/4" thick doors.

*Photograph 4*, shows the segmented knob shaft for quick and simple installation. To remove either the knob or keyed cylinder, simply remove two screws from the mounting plate of either the knob or cylinder. Special cylinders up to six inches long are available and all key cylinders may be ordered keyed different, keyed alike, masterkeyed or key controlled.

*Photograph 5*, shows a good view of the tailpieces on the back of the cylinder which not only winds the clock, but also retracts the lever attached to the lock bolt. *Photograph 6*, shows the tailpiece on the knob shaft and its relationship to the lever.

The basic body of the lock will fit a standard footprint of 2-5/8" x 1-5/8" mounting holes or 3-1/2" x 1-5/8" pattern. To mount the lock using the standard mounting hole pattern, you must access two of the mounting holes by removing the timer (see *photograph 6*). The timer is held to the lock case by four screws and is easily removed. The lock is factory mounted for right hand opening, but may be easily changed to left hand, vertical up or vertical down. I will explain how this is done later in the article.

The CS 401 has both an adjustable time delay and adjustable opening periods. In *photograph 7*, you can see the tapped holes in the timer cam for positioning the time delay screw (9 o'clock position). In this photograph the screw is set for one minute of time delay. You may also choose three, five and fifteen minute settings by placing

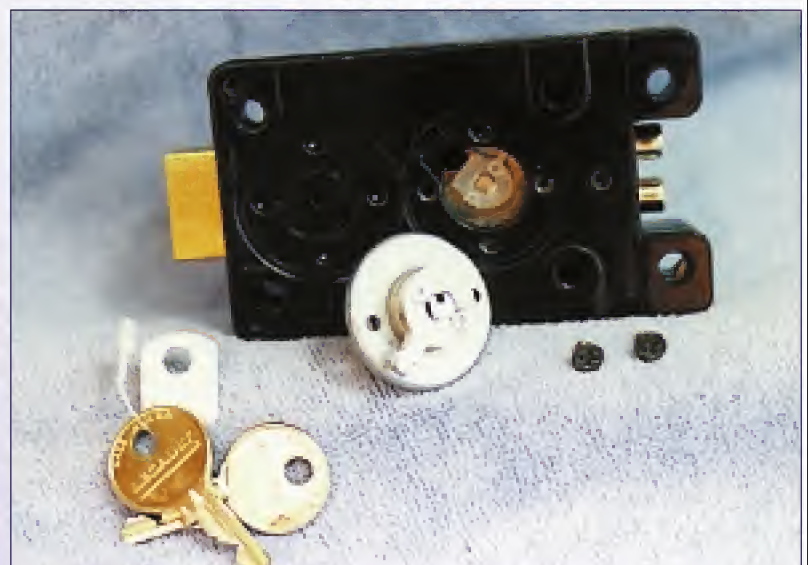
the screw in the corresponding tapped holes. Upon request Legault will make a 60 minute setting available. The placement of the timing hole for a 60 minute setting is at the 2:30 position.

The opening period for this lock is also adjustable for periods of one, two and five minutes. The small screw at the 12 o'clock position in the timer cam (shown by the arrow in *photograph 7*), is set for a two minute opening period. The one minute setting is to the left of this mark and the five minute option requires you to remove the screw altogether.

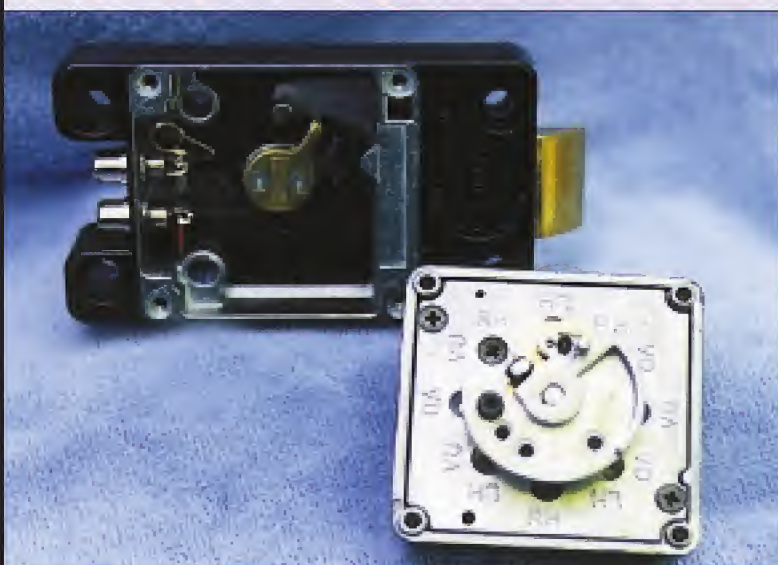
To the right of the lock in *photograph 3*, is one of the lock function indicators that is available for the lock. This unit will indicate the delay period and the opening period and use two AA alkaline batteries. You may choose from indicators which have LED lights, buzzer or acrylic luminous shafts for applications inside safes. *Photograph 8*, reveals the inside of this indicator unit.



**4. The segmented knob shaft for quick and simple installation.**

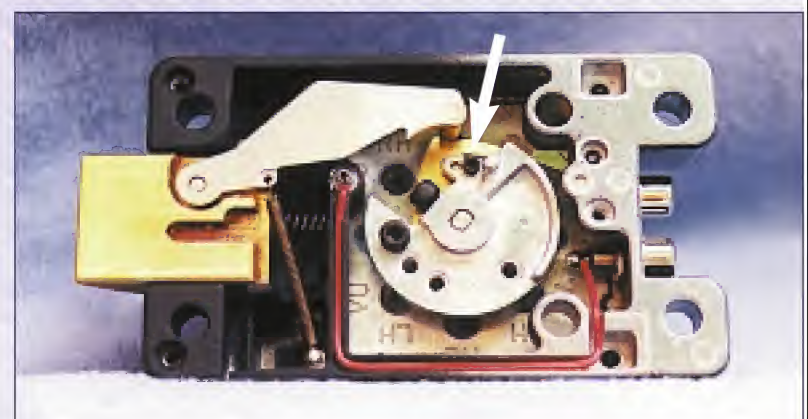


**5. A good view of the tailpieces on the back of the cylinder which not only winds the clock, but also retracts the lever attached to the lock bolt.**



**6. The tailpiece on the knob shaft and its relationship to the lever.**

**7. The tapped holes in the timer cam for positioning the time delay screw (9 o'clock position).**

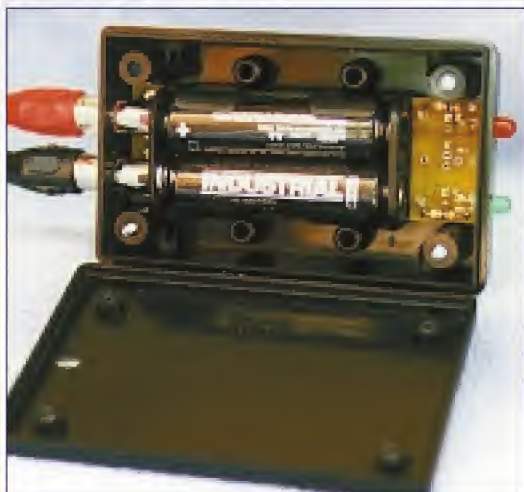






When turning the key or knob to the right, you activate the time delay and the time delay signal(s) which would be the red LED in this case. In *photograph 8*, you can see the lever being held up so as not to engage the cylinder's tailpiece until the time delay has expired. Whenever the time delay period expires and the opening period begins, the green LED signals and you have the assigned time limit to open the lock. Upon releasing the key or knob, the lock automatically returns to the locked position.

**W**ith the timer removed from the lock, the timer has been removed from its cover casing (see *photograph 9*). To remove the timer from its cover casing remove two screws, one in the upper left and the other in the lower right. With the timer removed you can now change the handing.



**8. The inside of this indicator unit.**

To change the handing remove the cam by loosening the cam retaining screw seen pointing in the 10 o'clock position (see *photograph 6 or 7*). Next remove the three screws that hold the timer plate to the lock timer (the cam obscures viewing them). Rotate the lock timer so that it aligns with the proper legend on the timer plate. The legends for each of the handings can be seen on the timer plate in *photograph 6*.

Reinstall the cam in accordance with the instructions and diagrams which accompany each CS401 lock. Replace the timer plate in the cover and tighten the two corner screws. When installing the timer plate into the cover casing there is a notch on the plate which must align with the protruding stud of the cover.



**9. With the timer removed from the lock, the timer has been removed from its cover casing.**

The Legault time-delay lock is a versatile dependable lock which is easy to install and service. If you would like more information on the Legault

line of time delay locks you may contact the company at (514) 683-6282. They can also direct you to the nearest Legault distributor. **TRL**



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# IC

# Lock Introduction

by **Gerry Finch**

**T**he use of Interchangeable Cores (I.C.'s) make the changing of a lock cylinder in seconds possible. In seconds, the old cylinder (Core) is removed and a new one is installed without the removal or disassembly of the locking device. This negates the use of a specific key that previously was designed to operate the locking device. A new key, one specifically designed to operate the new Core is needed.

The Best Company originated this particular type of I.C. in the early 1930's and it has been a best seller ever since. Cores of this type are available for practically all types of locking devices, mortise, key-in-knob, cabinet, mailbox, padlocks, and even switching devices (see illustration 1).

## LOCK CONSTRUCTION

The Interchangeable Core consists of the Housing and the Core Assembly. The Housing is what we call the Shell when describing a standard pin tumbler cylinder. The Housing for the mortise type cylinder is shown in illustration 2, along with the Core Assembly. In most of the locking devices the Core is used in, the cam is a part of the Housing and not the plug.

Illustration 3, represents the front and side views of the Housing and the I.C. assembly. The front view of the Core shows the Locking Lug extended. It is this Locking Lug that prevents the removal of the Core from the Housing when the Lug is extended. As shown there is a "Cavity" in the side of the Housing into which the Locking Lug seats. The side of the Core from the Cavity to the face of the Core is solid. The Core cannot be inserted or removed when the Locking Lug is extended.

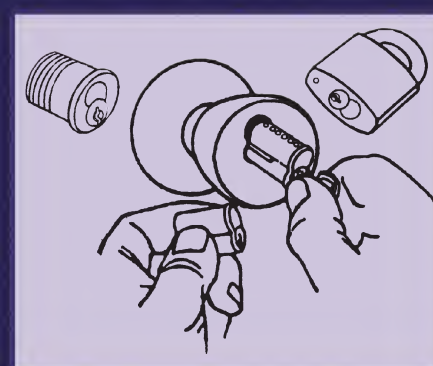
To insert the Core Assembly into the Housing the Control Key is inserted and turned 15° clockwise. This action retracts the Locking Lug into the body of the Core Assembly and the Core can be inserted into the Housing. The Control Key is now returned to the neutral position and retracted from the Core. This action extends the Locking Lug out of the Core and seats it in the cavity in the Housing. The Core can only be removed now by use of the Control Key because of the solid metal from the cavity to the face of the Housing.

Illustration 4, shows an exploded view of the Interchangeable Core Assembly. Note that there are considerably more parts here than you will find in a standard pin tumbler cylinder. Also note that in addition to the Shell and the Plug there is another body part known as the Sleeve. The Sleeve goes into the Shell and the plug goes into the Sleeve. Two shear lines are created, one between the Plug and the Sleeve and one between the Sleeve and the Shell.

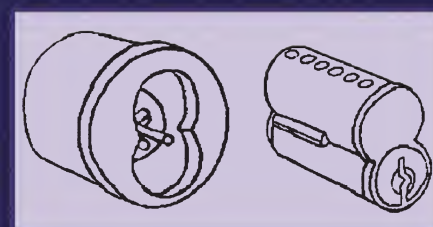
**N**ote also that a considerably larger number of pins are used in an Interchangeable Core. These Cores are available only in 6 and 7 pin configurations. Falcon Lock also manufactures a Core which uses spring covers as well as Cores using caps.

Another feature is that the Plug Retainer also acts as the key stop. Interchangeable Core keys do not have a shoulder. There is a cutaway portion of the bottom of the key at the tip that performs the function the shoulder on a standard pin tumbler key. This cutaway portion, known as

## Part 2 – Servicing Interchangeable Cores



**1. The Best Company originated this particular type of I.C. in the early 1930's.**



**2. The Housing for a mortise type cylinder along with the Core Assembly.**



the STOP, butts up against the Plug Retainer and aligns the center line of the key cuts with the center line of the pin chambers. The key stop not only provides a method for alignment of the key cuts and cylinder chambers but also secures the Plug and Sleeve within the Shell.

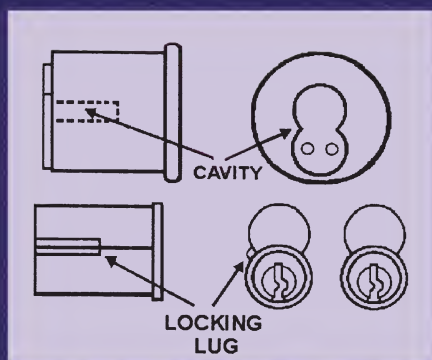
Shown in *illustration 5*, is a see through end view of the Interchangeable Core Assembly. Shown is the first shear line, known as the Operating Shear Line. It is located between the Plug and the Sleeve. All master keys and Change (Operating) Keys create this shear line. Only the plug is free to rotate in either direction as many degrees as necessary to activate the mechanism of the device it is housed in. The top pin, which is across the shear line between the Shell and the Sleeve prevents the Sleeve from rotating.

*Illustration 6*, illustrates the second shear line, the Control Shear Line. The Control

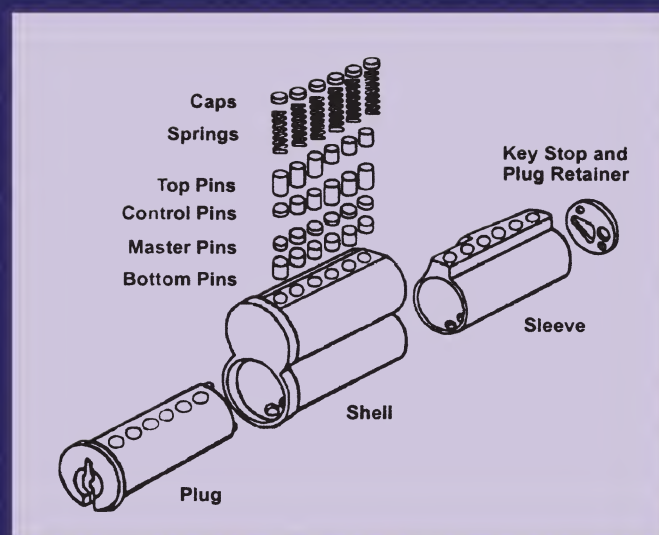
Key creates this Shear Line between the Shell and the Sleeve. When this Shear Line is created, the Sleeve can be rotated 15° clockwise by the Control Key. When the Sleeve is rotated to the maximum extent as shown, the entire Core Assembly can be removed from the Housing. When the Control Key is inserted and a shear line is created, the Control or master pin is across the operating shear line between the plug and the Sleeve. This causes the plug and the Sleeve to move as

a single unit. It is this feature, the rotation of the Sleeve and retraction of the Locking Lug that gives the Interchangeable Core its unique position and value among the many types of cylinders available.

The following illustrations show the positioning of all of the pins when the three different keys are inserted. *Illustration 7*, shows the Core in the



**3. The front and side views of the Housing and the I.C. Assembly.**



**4. An exploded view of the Interchangeable Core Assembly.**

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locked condition with no key inserted. Both shear lines, the Control Shear Line and the Operating Shear Line are shown. The placement of all of the pins is also clearly shown.

*Illustration 8*, shows the Core with a proper cut key inserted and a shear line established. The key could be either a master or a Change Key. Remember only the master and Change Keys create the Operating Shear Line.

*Illustration 9*, shows the Core with the Control Key inserted. Note that no shear line is created at the operating level. The Control Key is the only key that will create the Control Shear Line if the Core is properly pinned.

#### NUMBERING THE CORES AND THE KEYS

Numbering of the pin chambers and key cuts is backwards to what we are accustomed to when working with most standard pin tumbler cylinders. *Illustration 10*, illustrates the numbering of the pin chambers if from the rear of the Core to the face of the Core.

The pin chamber nearest the face of the Core is either the sixth or seventh chamber. When pinning the Core remember to pin from the rear of the Core to the face of the Core. The number one chamber is at the rear of the Core. The reason for numbering the pin chambers from the rear of the Core to the face is that the key stop at the rear of the Core is the indexing point for aligning the key cuts and pin chambers.

**B**ecause the Interchangeable Core Keys have no shoulders the key cuts are positioned in the Core by the Stop at the end of the key (*see illustration 11*). This stop butts against the key stop and Plug Retainer and properly aligns the key cuts and pin chambers.

When duplicating I.C. keys use the stop at the end of the key and not the tip of the key. It is not possible to duplicate an I.C. key accurately by gauging it from the tip in the manner used to duplicate other keys without shoulder stops. When reading or gauging a key or cutting from a biting chart, read and cut from the stop and not the tip.

#### KEYWAY SECTIONS

Standard keyways and key sections manufactured by Arrow, Best, and Falcon have been: A, B, C, D, DD, E, F, G, H, J, K, L, and N. The Best Company has some other keyways as well as some restricted patented keyways. Some companies, Arrow for instance, have created some of their own keyways

along with the keyways mentioned above. Each of the manufacturers occasionally add additional keyways and key sections to their line.

#### INTERCHANGEABLE CORE KEYING SYSTEMS

There are three different types of keying systems in use for the type of cores covered. They are the A-2, the A-3, and the A-4 systems.

The A-2 system uses increments of .0125". This is the most commonly used system. Examples shown in these articles will use the A-2 system information.

The A-3 system uses increments of .018". This is a single step progression system and was created because of the greater number of key changes that single increment systems offer.

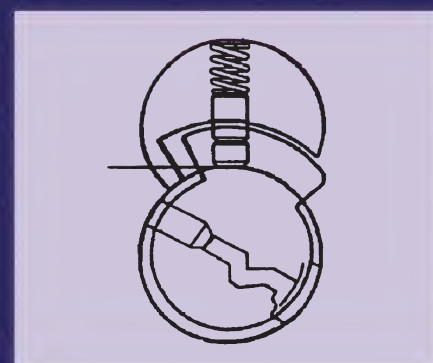
The A-4 system uses increments of .021". This is also a single step progression system.

If you are called upon to work on a system and are not sure of which system it is, "mike" out several keys and also "mike" the pins from several Cores to be absolutely sure of which of the three systems you are dealing with. The number one bottom pin and the first depth of cut, the zero cut are the same in all three systems. After that all numbers dimensions are different in each system.

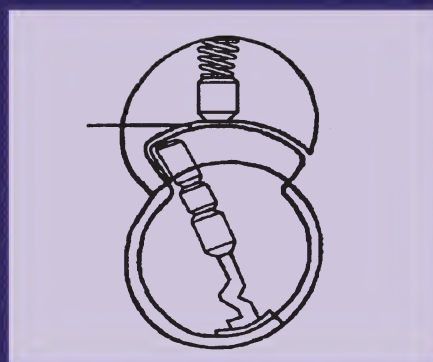
#### ORIGINATING AND DUPLICATING I.C. KEYS

Interchangeable Cores require much more attention to combining and keying than do standard pin tumbler cylinders. Due to the extra portion of the assembly, the Sleeve, and more pins in a chamber, tolerances are very critical. Excess must be kept to a minimum. The keys originated and duplicated for these Cores **MUST BE ACCURATE**.

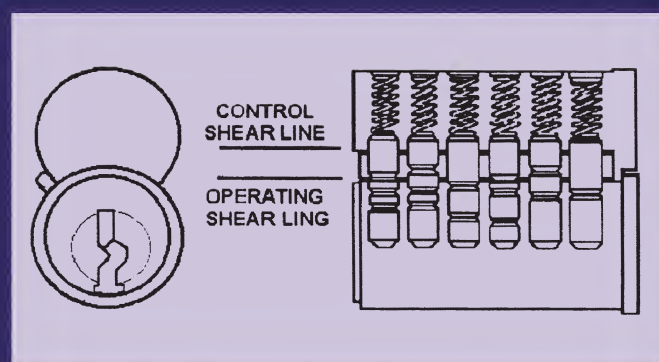
Most general purpose code machines will originate I.C. keys. The cutters furnished



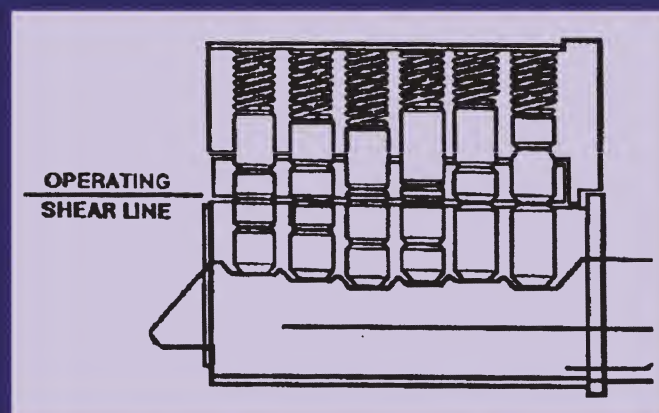
**5. A view of the Interchangeable Core Assembly showing the first shear line, known as the Operating Shear Line.**



**6. The second shear line, the Control Shear Line.**



**7. The Core in the locked condition with no key inserted.**



**8. The Core with a proper cut key inserted and a Shear Line established.**



with most of these machines are generally general purpose cutters and will not cut the proper cut shape when originating I.C. Keys. The proper cutters can be ordered from the manufacturer of the machine or a supplier of cutters. The proper cutter is a must if you care anything about the reputation you will

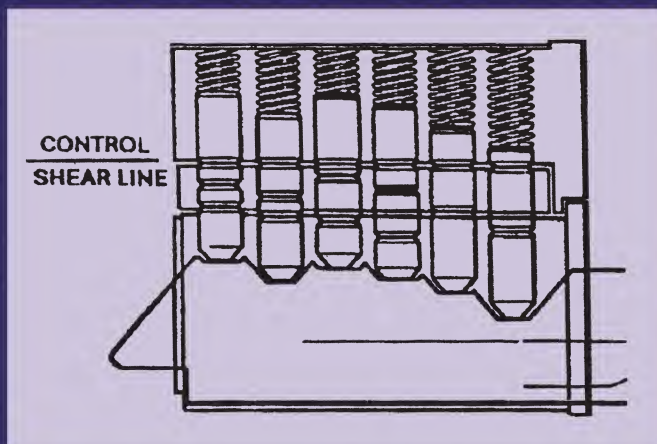
earn based on the quality of the work you perform and deliver. Also because the keys are coded from the stop at the tip of the key, special fixtures to place the key in the proper position is required. Most of these machines will have these fixtures.

**A** Key Punch designed to cut I.C. keys is far better to originate (and

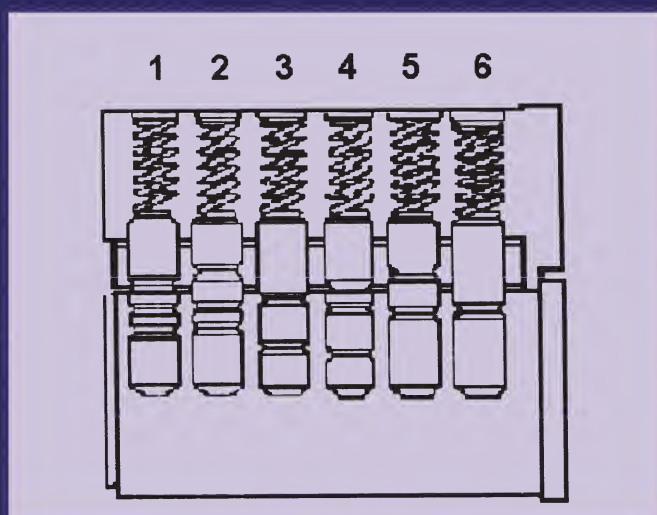
duplicate) keys with. The major reason is that they are designed especially for this single purpose, to originate I.C. keys. The angle of the cuts and the flat of the cut are as specified by the manufacturer of the Cores. These are two very critical factors when cutting these keys. Each of the manufacturers of Interchangeable Cores markets a Key Punch for their product and the A-1 Security Manufacturing Corp. makes a hand held punch that will originate or duplicate all three I.C. systems. The PRO-LOK Company also markets two fine punches for cutting I.C. keys. Both companies punches are good, all are expensive, all are worth the money. They are easier to maintain the accuracy of, they produce the proper cut shape every time and they are fast. You can cut a key on a punch in a third of the time you can on a code machine.

When required to duplicate I.C. keys, it is recommended that the key be decoded first and then be produced on a punch or code machine. Not only is it faster than using a duplicator but proper and more accurate cuts can be produced. Some duplicators come with the fixtures necessary to position the key properly in the jaws of the vises, others do not.

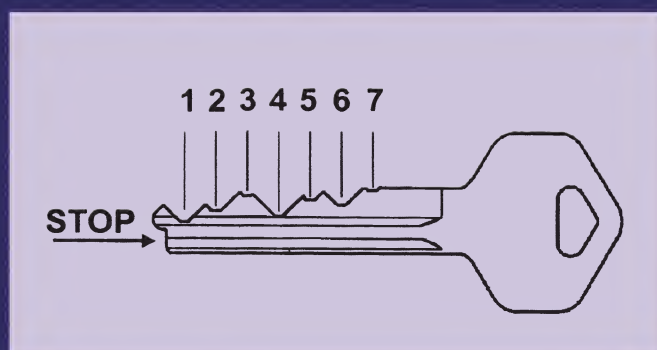
TRL



**9. The Core with the Control Key inserted. Note that no Shear Line is created at the Operating Level.**



**10. The numbering of the pin chambers if from the rear of the Core to the face of the Core.**



**11. Interchangeable Core keys have no shoulders, the key cuts are positioned in the Core by the stop at the end of the key.**

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# The National Locksmith's

## June 1998 Planning Calendar

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Lockmasters Signature Series Course Simplex Certification Nicholasville, KY 1-800-654-0637	Lockmasters Signature Series Course Simplex Certification Nicholasville, KY	Lockmasters Signature Series Course Push Button Manipulation Nicholasville, KY 1-800-654-0637			Bill Reed Seminar Seattle, WA (904) 476-2799
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Fourth Annual Locksmith Swap Meet & Olympics Quality Inn Motel Lyndhurst, NJ (973) 777-0620	MBA Training - DoD/DoE Combination Lock Training Nicholasville, KY (606) 887-0496	MBA Training - DoD/DoE Combination Lock Training Nicholasville, KY (606) 887-0496	MBA Training - DoD/DoE Combination Lock Training Nicholasville, KY	MBA Training - DoD/DoE Combination Lock Training Nicholasville, KY	MBA Training - DoD/DoE Combination Lock Training Nicholasville, KY	
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
ALOA '98 Nashville Convention Center Nashville, TN 1-800-532-2562	ALOA '98 Nashville Convention Center Nashville, TN	ALOA '98 Nashville Convention Center Nashville, TN	ALOA '98 Nashville Convention Center Nashville, TN MBA Training - DoD/DoE Combination Lock Training Nicholasville, KY	ALOA '98 Nashville Convention Center Nashville, TN MBA Training - DoD/DoE Combination Lock Training Nicholasville, KY (606) 887-0496	ALOA '98 Nashville Convention Center Nashville, TN MBA Training - DoD/DoE Combination Lock Training Nicholasville, KY	ALOA '98 Nashville Convention Center Nashville, TN
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
		Lockmasters Signature Series Course Lever Lock Picking Nicholasville, KY 1-800-654-0637	Lockmasters Signature Series Course Lever Lock Picking Nicholasville, KY	Lockmasters Signature Series Course Time Lock Servicing Nicholasville, KY 1-800-654-0637	Lockmasters Signature Series Course Time Lock Servicing Nicholasville, KY	Lockmasters Signature Series Course Time Lock Servicing Nicholasville, KY
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>				



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# BUSINESS BRIEFS

## Sargent & Greenleaf Comptronic Safe Line



Sargent & Greenleaf has announced a new name for their electronic safe lock family of products "Comptronic." At the same time they are introducing a new performance level in electronic safe locks with the release of their Models 6124 and 6125.

Both models open in one step and relock automatically due to the motor-driven deadlatching lock bolt.

## ACSI Receives UL Listings

Architectural Control Systems, Inc. (ACSI) has received UL listing for the 1406-04-AO power supply. The 1406-04-AO is designed



and manufactured by ACSI to operate exit devices with ACSI Series 1550 Electric Latch Retraction Modifications. Features of the 1406-04-AO include: sequential or individual control of two exit devices, fire alarm interface, auto-operator interface and 12 volt of 24 volt outputs.

For more information contact Mark LeGrand at (800) 753-5558 or Fax (314) 432-2090.

## Securitron Gets ISO 9001 Certification

Securitron Magnalock Corporation announced that

as of January 28, 1998 it has become the first American electric lock manufacturer to achieve the prestigious ISO 9001 certification.

This certification requires Securitron to maintain a comprehensive set of procedures and documentation in all aspects of the business process from engineering design concept through sales policy, with strict quality checks on every process along the way.

## Safemasters Web Page



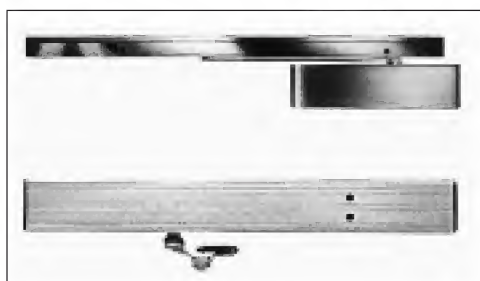
If you need information on Electronic Access Control, CCTV, High Security Locks, Exit Devices, Padlocks or Safes & Vaults, Safemasters now has a web site to access the information. It can be reached at: [www.safemasters.com](http://www.safemasters.com), or call toll free at: 800-295-4702.

## Weslock Celebrates 66th Year

Weslock Brand Company celebrates its 66th anniversary this year.

As Weslock acknowledges its past, the company enters a new era under the direction of Howard Brand. His acquisition company, TiBrand Industries, Inc., purchased the assets of Weslock National last November from Macklanburg-Duncan through a \$19 million financing negotiated by Kann Capital, Ltd. Brand will run the operations of the business on a daily basis as president and CEO.

## LCN Electronics Stocked by Security Lock



With the addition of electrically controlled Fire/Life Safety closer/holders to its inventory, Security Lock now carries the entire LCN line.

In addition to LCN architectural grade manual closers and power operators, Sentronic® units, in every finish,

cover style, cylinder and arm function are in stock at Security warehouses.

For more information contact Security Lock Distributors at 800-847-5625, or Fax: 800-878-6400.

## AHS Stocking Securitron "Unlatch"

Securitron's "Unlatch" is now in stock at Access Hardware Supply. The Unlatch is a revolutionary 12/24 VDC electro-mechanical cylindrical style latch release that will operate with up to 30 pounds of door pre-load. The Unlatch will fit a standard ANSI 4-7/8 cutout and requires no routing or chiseling of the door frame.

For more information contact AHS at 800-348-2263 or fax your request to 800-435-8233.

## Continental Instruments Has Two More Sale Offices

Continental Instruments LLC announces the opening

of two additional sales offices to service the West Coast office, located in Claremont,

California. The West Coast office will be staffed by Hasan Sawda and the Southwest office in Albuquerque, New Mexico will be home to Wayne McDay.

Hasan can be reached by phone at (909) 624-9928, Wayne can be reached by phone at (505) 857-0286.


## NEBS Redesigned Web Site

NEBS Inc. has completed a major redesign of its Web site (<http://www.nebs.com>) in order to make it easier to navigate, and to expand its management information for owners of small businesses.

Visitors to the site can search within NEBS Resources for Small Business- among dozens of articles indexed on such topics as "Managing Your Business," "Sales and Services," and "Personal Edge."

## ALOA '98 Security Expo In Nashville

The 42nd annual ALOA convention and trade show, the ALOA '98 Security Expo, is scheduled to be held from June 14-20 in Nashville, Tennessee. The event is hosted by the Associated Locksmiths of America, Inc., the international trade association for locksmiths and related security professionals. ALOA '98 will feature the best in exhibits and education available to the security industry.

For more information call 800-532-2562. 



# KEY CODES

## 1998 Subaru Forester 30001-37850 - Part 2

**Key Blanks**

Ilco - X251

Ilco/EZ - SUB1

Curtis - DA34

Jet: DA34

**HPC 1200CM**

Code Card: CF304

Cutter: CW-1011

Stop: Tip

**Framon**

Cut Start: .337

Cut to Cut: .083

Spacing Block: #5

Cutter: FC-8445

Key Clamping: Tip stop key.

 Align tip of key with left side  
of vise jaw.

**A-1 Pak-A-Punch**

PAK-N4

**Curtis**

Cam: DM-40

Carriage: DM-41

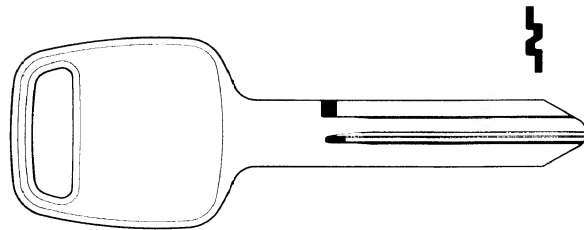
Cut to Cut Spacing: .083

Number of Cuts: 10

 Note: Codes printed bow to  
tip.

Key Gauged: Tip

M.A.C.S.: 2


**Spacings:**

 1= .915    6= .50  
 2= .833    7= .418  
 3= .750    8= .335  
 4= .667    9= .252  
 5= .584    10= .169

**Depths:**

 1= .333  
 2= .307  
 3= .281  
 4= .256

34001 3123444211	34020 3312342221	34039 1113324431	34058 1132433211	34077 3324211221	34096 2213113431
34002 1344432231	34021 1332124331	34040 1321113421	34059 2243122111	34078 1122434321	34097 3312242231
34003 1313444311	34022 2243221131	34041 1322133431	34060 3113421231	34079 1122312331	34098 3322343421
34004 2213331121	34023 1321213211	34042 1121322131	34061 1333422311	34080 3113343311	34099 3343323211
34005 2231132221	34024 1323324421	34043 1324234321	34062 3311332131	34081 1332433121	34100 3124324431
34006 1332322111	34025 1334211211	34044 1343244431	34063 3342112311	34082 3132132431	34101 2231213311
34007 2213423121	34026 1123443331	34045 3322243431	34064 2223113331	34083 1343443131	34102 3112312231
34008 1334221131	34027 1343311221	34046 3133224221	34065 1321231321	34084 2234422121	34103 3121344421
34009 3111322121	34028 1322312421	34047 3323342221	34066 3122123421	34085 2232311311	34104 2224312331
34010 1112321321	34029 3342321311	34048 2231113231	34067 2213132221	34086 3311124321	34105 3313113431
34011 2213122431	34030 3322331321	34049 1342113211	34068 3112112321	34087 1343122311	34106 2243342131
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34013 1322433111	34032 2232433321	34051 1332123321	34070 1133324231	34089 2244432431	34108 1333223431
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34017 3124312221	34036 3134431121	34055 3111222331	34074 3322432231	34093 1321124311	34112 3113423121
34018 1134322421	34037 3332243131	34056 3123121121	34075 1122431331	34094 1133223231	34113 1113342321
34019 3313123131	34038 3342213331	34057 1134442121	34076 1323442321	34095 3322433421	34114 3133444311





## 1998 Subaru Forester 30001-37850

34115 1133443321	34185 2233223321	34255 3122311321	34268 3121132211	34281 1313322121	34294 3123334231
34116 1313243231	34186 1112424431	34256 3132432131	34269 3342331321	34282 3121122331	34295 1343244321
34117 2243242431	34187 3134213321	34257 3342312331	34270 2221322311	34283 1344232211	34296 2234324311
34118 1122321311	34188 1134221221	34258 3112213321	34271 3342322431	34284 3132113421	34297 1132321121
34119 2213223231	34189 3312122331	34259 3122443211	34272 1113233421	34285 1333443121	34298 2243312321
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34125 1332434311	34195 1323123431	34265 3342133231	34278 1344211311	34291 2231122321	34304 3113444331
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34165 3132221131	34235 2231213221				
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34168 3121224211	34238 1133422131				
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34182 1324322431	34252 1133232211				
34183 3334423111	34253 3323311311				
34184 2213222131	34254 3313112221				



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***Exit Devices.***

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# 1998 Subaru Forester 30001-37850

34307 2212432331	34377 1334243331	34447 1312331311	34517 3112112231	34587 3332242211	34657 3122333211
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35306 3123234221	35338 1321223331	35370 2243244431	35401 1122334331	35432 3112343321	35463 1334221331
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35310 2243334231	35342 3134432331	35374 3311332221	35405 2233233221	35436 1134443221	35467 2211133321
35311 2221132231	35343 3311244421				



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35469 2231112221	35501 3311233311	35533 1124322431	35565 3123233211	35597 2212233211	35666 3311324211
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35629 1313421121	35698 3323442231
35630 2232211211	35699 3112313311
35631 3331132221	35700 2244211331
35632 3121322131	35701 2234331221
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**S**entrylok, Inc. originally incorporated as Magnegard Lock Corp. in 1985, is a third generation family business established by Abe Deutscher, who is considered by many to be the founder of the alarm lock industry.

Today Sentrylok draws on over 30 years of experience in door hardware and security to offer a variety of access control products. Through the years, the family has built a reputation of offering high quality products at competitive prices, and the best service to all customers, from small locksmiths to large distributors.

Sentrylok offers both alarmed and non-alarmed panic hardware. The unit tested was the model 24NA (non alarmed) panic hardware. Used as an ordinary panic device, the 24NA is designed to meet the challenge of combining safety and security for any application.

**LOCK FEATURES:** The Sentrylok 24NA is made of rugged high strength steel with a pressure cast cover. The unit is corrosion resistant and features automatic relatching for 36" and 48" door widths. It can also be bardogged in the open position.

The 24NA is non-handed and available in aluminum or duronodic finishes.

**CONSTRUCTION:** The overall construction of this device is very good. The unit operates very smoothly and has a good solid feel when crashing into the bar.

The 24NA is UL listed and NYC and California approved.

#### **SPECIAL FEATURES:**

##### **Exclusive Combination Strike**

Sentrylok's combination strike makes the need for specifying or stocking single or double door applications unnecessary. The lock is

## Model 24NA Panic Bar



non-handed so you only need to specify door width of either 36" or 48".

#### **Security Screws**

Each Sentrylok comes with head cap and end cover security screws to deter vandalism.

**INSTALLATION:** As is most surface-mounted panic hardware, the 24NA is easy to install. It can be installed on both a single door or a double door with mullion. A template is supplied with the unit and should take no more than 30 minutes to install.

To install, first disassemble the Head Cover, Top Cover, End Bracket and End cover from the device.

Fasten the device to the door starting with the head mechanism with the four #12 screws provided.

Hold the device level and insert the end bracket over the channel. Mark the position for the two holes in the end bracket. Drill #14 holes and fasten the end bracket with the two #12 screws provided.

Install the combination strike in the proper direction (single or double door) with two #12 screws. Adjust the position of the strike so that the free movement of the closed door between the latchbolt and the strike roller is no more than 1/32".

Tighten the screws and mark and drill a .182" hole in the center of the combination strike to secure it in position with one #12 flat head security screw.

Insert the Top Cover into the channel and assemble End Cap and Head Cover with security screws and the job is done.

If an outside Rim cylinder is needed, a 1-1/4" hole will need to be drilled for its installation.

#### **SPECIFICATIONS:**

**Weight:** 11 lbs. (shipping weight 13 lbs.)

**Lengths:** 33-5/8", Aluminum Doors 34-7/8" (narrow stile glass doors) 45-5/8" (can be cut to suit)

**Width:** 3-1/2"

**Depth:** 6-1/8"

**Latch:** Deadlatch with deadlocking mechanism

**Finish:** US 28 Epoxy dull aluminum

#### **US 312 Duronodic**

**Cylinders:** Rim type (for outside key control)

**OPTIONS:** Sentrylok offers a wide range of options and accessories to satisfy your needs such as:

**Rim Cylinder HKR:** Used to lock and unlock any exit and panic hardware. The lock includes two keys.

**Double Door Holders 404:** Secure the inactive door when the Model 24 is used on the active door.

**Outside Finger Pulls 411:** Offer convenience for opening the door from the outside.

**CONCLUSION:** The Sentrylok is a well constructed smooth operating panic bar. Although we were not able to test the life cycle of the unit, from indications, it would appear to provide many years of trouble free service.

The list price of the model 24NA is \$115.00 which is quite reasonable for a quality panic device.

For more information on the model 24NA panic hardware contact:

Sentrylok Inc.  
1930 Case Parkway  
P.O. Box 616, Twinsburg  
OH 44087

Phone: (216) 425-1354

Fax: (216) 425-1834

#### **IN SUMMARY:**

**DESCRIPTION:** The Sentrylok model 24NA (non alarmed) panic hardware is designed to meet the challenge of combining safety and security for any application.

**PRICE:** List is \$115.00

**TEST DRIVE RESULTS:** The Sentrylok is a well constructed smooth operating panic bar. It would appear to provide many years of trouble free service.